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Address.

IDEALS IN MEDICINE.*

NORMAN BRIDGE, A.M., M.D.

EMERITUS PROFESSOR OF MEDICINE, RUSH MEDICAL COLLEGE, CHICAGO.

LOS ANGELES, CAL.

The career of every man is made in part by his opportunities, his powers, his equipment for the particular work and by the accidents of life. It is made quite as much by the plan and conception of his work and of himself, with which he starts out—and these are his ideals; and the ideals of no two men are ever exactly alike.

That a man's ideals are his making or his destruction is a very old truth, but it refers mostly to the cardinal virtues. The standards of honesty, truthfulness, uprightness and personal cleanness are the teaching of the best of all time. They are the indispensable ideals. To enlarge on them now would be to preach a sermon, and that is not a part of this program.

I would rather present some of those usually forgotten or unthought of ideals, those hidden standards that guide and govern the life in unexpected and surprising ways. These are numerous and varied, and nearly always possess a man without his knowing it; often without his friends knowing it. But they are automatic and never stop, and they control a man like a fetish. They are the hidden leaks that lose the wine, or some undiscovered supply that increases it. A man may forget for an hour his good resolutions or his religion, but these stealthy, idealistic guides will stick to him like his habit of breathing—they work with the certainty of subconscious mind. These ideals create habits that control us inevitably—and we are often ignorant both of the ideals and the habits they have created.

What are ideals for? To make an upright life? Yes, but also to make a successful one; to increase our power to do for ourselves and for others.

The greatest success on the average comes to those with symmetrical powers and character; not to those who are warped and one-sided. That ideal is of most worth which makes a man stronger in his weakest power; that is most worthless that increases his unbalance and accentuates his warping. Wherefore there are fit and unfit ideals.

But the surprising paradox is that, apart from the greater virtues, the ideals a man usually selects or becomes in some way committed to—what we may call his secular ideals—are unfit; that is, they are such as increase rather than lessen his asymmetry.

The reason for this is not strange—our ideals of this sort come to us along lines of least resistance. The reverse ought to be the case; we need ideals that will help us over our defects, not to increase them.

We do the same thing many times in our educational methods. A boy selects as the branch to study that which he learns easiest and knows most about, and neglects the tasks that for him happen to be harder. This tends to make the great talent greater and to let the lesser talent atrophy. When carried to an extreme degree this state of things constitutes genius; carried a little farther it is degeneracy, and the world is not sufficiently in need of geniuses to make degeneracy, or even the borderland of it, profitable.

The sometime gospel of pedagogy has said that the child, from the beginning, may select his course of study—learn what he likes and omit what he pleases. Of course, he likes those things in which he is apt and strong, and hates those hard ones in which he is weak—and so he grows more uneven. Happily, all educators do not agree to this tenet; some believe that a child's course of study should tend to make a symmetrical man, not favor asymmetry. This is logically the part of wisdom.

Thus of a man's ideals. They ought to contribute to his power and increase his happiness. But unfit ideals—both positive and negative—are the source of a great amount of grief, failure and chagrin. That man who knows (from his examination papers or otherwise) that his use of English is crude and blundering, should have the perfection of the language for one of his ideals, and try to acquire a critical sense of it. But this is the very thing he is least likely to do, both because his consciousness of his fault is dull and because the ideal is hard. The lack of such an ideal has kept many a man below his deserts and sometimes even blasted a career. I know of several notable examples of this sort. One was a man of great superiority in the science of medicine who failed of appointment to an important professorship he had coveted for years, and for no other reason than the lack of such an ideal.

If a man could know that in his demeanor he is liable to be rude, brusque and impolite (as his neighbors know it) he might erect an ideal of gentleness and courtesy with great profit to his spirit, and, if he practices a profession, profit to his purse also. Probably he has already fully or over-developed powers in other directions, most likely in force and effectiveness. Can he discover the need of a new ideal and create it? Perhaps he can, but nothing short of a new birth in introspective psychology will enable him to do it.

On the other hand, the man who is naturally courteous and thoughtful of the feelings of others in little things,

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and especially in the entertainment of others, is in danger of overdoing a good ideal. For it can be carried so far—and often is—as to entail a burden in the manifold duties which it imposes. It is a greater burden in the fear, dread and terror it often produces in its possessor lest it may be violated. And when it is in excess it has no compensating advantages, except some very dubious ones. The standard requires the person to be polite and to entertain others in conversation—so a sick man wears himself out entertaining thus a lot of people to whom he is under no obligation. A distinguished friend, when on his death-bed and too weak to talk to anybody, actually felt called on to apologize for not talking. The ideal sometimes grows to be a sort of craze—not only to talk, but to believe it a duty to talk whenever within earshot of others. Then follows a species of deception and finesse—for we get tired of people, even our friends, and tired of talking to them; so we shun them, keep out of their way, avoid them, give a lot of fictitious excuses for not coming and for being out. For we know perfectly well that once in their presence nothing but syncope or death can stop the wagging of our tongues. That we have enough of plain courage to stop it, is unthinkable!

Ideals as to personal appearance, dress and adornment lead to many bypaths that take us into unexpected regions. Sometimes the effect is grotesque in its influence on character and success in life. The sum total of it is usually unfortunate, if not bad, the one advantage being the happiness which the individual himself seems to get out of his indulgence. It is a cheap sort of happiness, always yoked with a degree of vanity, but some people can be made happy by such things. Once there was a judge in the east who, for a quarter of a century, appeared daily with his hair wrought into large curls. It was inevitable that it should influence his character and his relations with others. Not that the curls amounted to anything *per se,* except as they singled him out from among the rest of the community, but solely through the introspecting influence, the egoism which is engendered in the man.

If it were the custom for men to wear rings in their noses it would mean little except a thraldom to a mere fashion—a thing we are constantly victims of. Fashion allies us to a race, a guild or a set of people. For one man in a hundred thousand to wear a ring in his nose takes him conspicuously *out* of the fashion and into the realm of vain conspicuousness.

The curls of the judge even failed as a mark of defiance of that fashion whose purpose is show. Such a defiance would have required a fine sort of courage and independence. If that kind of fortitude had been required in order to wear the curls he never would have had them. It needed only a species of vanity, a desire to do something others did not or could not do, something that would distinguish this man from all his fellows; or an abounding desire to please his personal fancy. It was different, too, from a wholesome desire to distinguish the self from others. That could have been sought through work, art, achievement, skill or daring—what countless thousands of men and women are doing every day. This took no courage worthy of the name, no work—save a few minutes each morning with his curling facilities—no attainment, or study, or skill. He paraded his curls like the color of his skin, or the shape of his features, or the gait of his walk, and without a particle of credit of any kind.

Now the curls were a trifle, like an inch-long fingernail or a beard the length of the body. These are all little things in themselves and amount to nothing in the world's greater arithmetic. But they are vital if they signify a mental quality, an emotion, which colors the life and segregates in some way an individual from his fellows—and they always mean a weaker rather than a stronger purpose. They are more lamentable still if they beget, as they tend to, an emotion that lessens the power of the individual in the world. Such a waste of personal force and influence is a sin.

It is no adequate reply to the criticism to say that such habits are happifying to the individual, for joy can come as truly from ennobling and developmental emotions as from weak and minifying ones.

To make oneself odd by defying a useless or injurious fashion, when it takes courage to do it, is commendable. That is to defy the class conscience and take a stand for the sake of individual conscience. The fashions in trifles, like neckties and ribbons, is the refuge for souls that lack courage. To refuse to use tobacco or liquor, or wear high collars or tight corsets, sometimes takes the manner of courage that pushes a man into battle, or makes him face an epidemic of deadly disease and not run away from it. No case can be made out against such courage—it can not even be laughed down.

There are some ideals which a practitioner of medicine can not afford to do without, as there are those he ought to shun with all his power. One of the latter that is very common to us is that of our own certainty and sufficiency. We fall into it unavoidably. We have, we believe, the very foundations of all wisdom, and we are bent on reforming the world, if not making it over, in the first decade. So there grows up within us a great amount of dignity and personal importance that is sure to be jarred by sundry experiences of life. But we feel bound to protect and defend them, nevertheless. When a patient fails to take the medicine as ordered, or otherwise ignores our advice, we are affronted and get warm or grieved over it, and so waste a store of good energy that we might put to a better use.

It is a slow lesson that people have notions of their own—foolish ones often—which they have been following very much for centuries, and that they have some rights to follow them, even if they are foolish; also, that they frequently will follow them in spite of any and all of our efforts to the contrary. And we gain less rapidly when our sense of independence and personal importance runs against theirs. It is a long step forward when the young physician can say to the misbehaving patient, and say it gently: "Of course, you do not *have* to take the medicine I prescribe or to follow my advice. They are both given on the theory of doing you good, but you can omit them if you wish; only remember that if you do omit them, not I, but you, take the responsibility. I am willing, even glad to be freed from responsibility if you wish me to be." Say that and see how quickly the moral atmosphere will change.

Have an ideal that you will do your work honestly, faithfully, not lazily or carelessly; that you will keep written records of your work and not trust to your memory of it, and that then you will take the consequences without grumbling or whining. This is of the very essence of the best courage. Moreover, after you have planted your seed as best you may, watch for its sprouting, but don't dig up the ground to see if it has sprouted or is growing downward.

Shun the vicious ideal of speculating in your mind

as to what in general others think of you. Don't walk down the street metaphorically asking people whether they recognize in you the sort of a fellow you think you are. To do it distracts the mental attention and prevents serious work; or leads to worry, fear, suspicion, jealousy and heart-burnings. It doesn't pay. And when you begin to guess—for many will, and usually guess wrong—as to how others think and feel about you, then you are walking along the rim of the grand canyon of gentle lunacy. You may never do it—pray that you never will—but you can then very easily plunge over into the canyon.

I once had a friend, eminent in the profession, who, when called in an emergency to see a patient of another physician in his absence, always prescribed with ingenuous loyalty, both to the patient and his physician. But he would go round the next day and make an unexpected call on the patient. When asked why he did it, he said: "I do it to see how I stand with the family." He was a good man in most things, but he was wrong in this, and the foolish ideal tinged to his discredit his whole career. He had no call to constitute himself a detective to find out whether the people thought well or ill of him—and it was little advantage if he did know, for if it was well his vanity grew, which was needless, and if it was ill he increased his bitterness, which was unnecessary. His duty ended when he had served the patient honestly and scientifically, and he ought to have had the courage to rest his case there. His duty, like the duty of all men, was to know himself that his conduct was correct and that it tallied with the Golden Rule.

One of the best ideals of all is that we will not and can not afford to be petty and triflng. This is a hard one to hold to, so naturally do we fill our heads with the trivialities of life. We talk about trifles, hear about them by the hour, and read them in the columns of personal gossip in the daily papers. If you care for a curious study in the anatomy of your own daily life, just make a list every night for a week of all the trifles that have concerned your mind during the respective days, and lay the record aside for a year. Reread it then, and say whether you think it was a profitable week.

One of the hardest things of all to do—and one of the most important to be done—is to make sure that we do not regard to-day that thing to be momentous which to-morrow we shall know to have been a trifle. The struggle after real consistency is a hard one.

One of the greatest achievements of a young physician is to be able to be dismissed by a patient and be serene about it. It is a question of point of view and the relation he thinks he holds to his patients. If he has the only right view, namely, that he is a servant of the public, and that his relations with his patients must be of absolute mutualness, and that he most of all desires that the relations shall cease the moment the mutualness is broken—if he can get himself up to this platform he has smooth sailing—otherwise, he encounters repeated seas of hot water that rob him of many of the joys of life.

Numerous physicians go through life with such false and artificial notions about their fees as to create for them a lot of trouble. Their difficulties are chiefly of two kinds. One is an unreasoning idea, acquired out of nothing and from nowhere, that all patients must be averse to paying for their medical services, and resent being asked to pay. So the young physician is likely to feel that sending a bill, and particularly the dunning of a patient, has some of the qualities of a challenge to combat; and that it will be at best a very unpleasant task. This is all wrong; the average patient expects to pay a fair fee for faithful attendance, and to take the contrary view discredits both the physician and the public. Of course, there are a few men and women who have no appreciation of their just obligations, and always try to shirk them—but they are the exception, and we ought to be willing to teach them some lessons by wholesome insistence, and to do it without anger and without looking or acting as though we had been stealing.

The opposite ideal with which a few start out is that of coveting the enormous fees they have heard of a few men receiving. This attitude is unfair to the people, who should only in the rarest instances be expected to pay such sums—and can only in a few cases afford to pay them—and it does the physician discredit, since it begets a spirit of sordidness, and works against the best service of the profession to the public, which is one of the most sacred of all the duties of the physician.

Let us first be scientific and faithful to our patients; let us acquire friends and a large clientele if we can; then let us raise our fees to keep down a flood of work that happens to flow our way. When, if it ever comes, something leads the public and the profession to make a large enough market for such talents as we have, then let our fee bills to those able to pay recognize the fact, but let us never, as we hope for future happiness, be grasping with the poor people who give the world its best lessons in frugality and honesty; and let us, as we hate meanness, never forget our own days of small things.

Let us be honest to science and to ourselves. If we have to shade the fact to the patient for his own good, and even to give him placebos to the same end, we must never deceive either science or ourselves. There is only one right way to study and practice medicine, and that is in a spirit of humility to the truth, and especially to the new truth—but to the truth proven.

Probably the most effective mental quality that most young practitioners lack—that few men have at beginning—is the power of imperturbability. No other quality so makes the physician superior to accidents, emergencies and trouble as this; as no other is so profitable in making his reputation as a power.

If a patient dies on the operating table, or goes out in a minute from pulmonary hemorrhage, or if you discover you have blundered, you must not shake; and you must not throw up your hands while life lasts. However appalling the emergency you must not be dismayed; and you must make your best fight when the tide sets against you. In athletic games that man is worth little who can only play his best when victory and the shouts of his friends are in the air. So in this professional life, the man who is strong only when no calamity threatens is worth little. In this civilian career the best quality of a soldier is needed, that quality is dependableness in times of trouble.

Finally, there are a few ideals that are so vital for an all-round success that they are sacred. One is that this business of life is too important for us to waste time and energy in contentions for personal ends. If we contend it must be for some principle or for a benefit to the public whose servants we are. There is one sovereign remedy for all personal quarrels that anybody may attempt to get you into—that is to ignore them and go on

with your work. If you will only have pleasure in this and let it fill your days, you will have no time to contend, and your neighbors will soon know the fact.

Another ideal, and the most sacred of them all, is one of discontent—a discontent that must only end with your latest breath of mentally competent life. You must be dissatisfied with the many unsolved questions of science, problems of the greatest interest; problems that concern the lives of all the people. It is an unending work of love and interest to solve them; and the long night of our past ignorance about them must not discourage you. So much new science has come by the labors of our profession within the memory of men still young, that nobody should be discouraged as to the future. Cancer will be understood and pernicious anemia and diabetes, and a hundred other diseases, and the greatest enemy of all, tuberculosis, will be controlled—and toward these ends every man can contribute. If you can not become an investigator you may help hold up the arms of another who is, and so shall have some part in the cumulative consummation. Stirred by this discontent your eyes must look steadily forward for new light—beware of the false ones—for the true light will appear and you shall not be surprised because you have been looking for it all the years—so shall you grow and learn to your latest day, and you shall escape mental fossilization. This deplorable fate of so many physicians comes of a fixed notion that most of the knowable is known, and that science will remain as it was. But whoso postulates that many things are yet to be discovered, and that some of his most precious theories may one day have to be given up or recast, and that it is a disgrace to stand still—that man will keep his heart warm and his interest close to the moving column. He can never become a mental fossil; and though living into age he shall die young.

The medical profession must progress and grow in knowledge, and the new knowledge must make for higher usefulness. But we are in danger—and the more volatile of us in most danger—from this very fact. We are liable if not likely to be side-tracked in a pursuit of one idea and to be governed by it, and so lose our sense of proportion; to become seized with a fad and try to square the world with it. The rapid progress of our science and art during the past few years has increased this danger, and we have had plentiful examples of medical men being dominated by a single thought, and losing all judicial judgment. Some of the more enthusiastic of them have had a new fad each decade for forty years. Hardly one of them has attained to great success in any way, unless the occasional riding into pecuniary fortune, possibly in the saddle of their fads, may be called success.

No professional man has great success merely because he makes money—success requires also usefulness to his public, loyalty to the truth, the approval of the great body of his associates, and a clear conscience of his own. Thorough sanity and moderation in all our judgments is, therefore, the only safe ideal, and there is more need now than ever before for this standard in the medical profession. To "prove all things; hold fast to that which is good," has not ceased to be wisdom. We can be progressive and be sensible also.

We can be moderate and judicial, refuse to be stampeded either for or against a new doctrine, and yet put every new truth to its best use. We have no warrant, simply because we have discovered a new fact, to throw our hats into the air and forget that this fact has important relations with a hundred old truths that can not be abandoned, and we will show our wisdom by searching for those relations. If complete salvation ever comes to us it must be through all the truth, not a mere fragment of it. And a due sense of proportion—otherwise common sense—as an unswerving and insistent ideal is, in a work-a-day life, the best guide for a safe journey.

Original Articles.

THE CHEMISTRY OF THE TROPEINS.*

A. B. LYONS, M.D.

DETROIT.

It is now more than seventy years since Mein announced the discovery in belladonna of an organic base. The discovery was made independently two years later by Geiger and Hesse, who in the same year discovered in stramonium a similar base to which they gave the name daturin, also in henbane another which they called hyoscyamin. It is needless to follow the details of the subsequent investigations which even yet are not complete. Suffice it to say that they have led to the conclusion that the bases discovered in the several mydriatic drugs, belladonna, stramonium, henbane, mandragora, duboisia and scopola, and named at first from these respective drugs, atropin, daturin, hyoscyamin, mandragorin, duboisin and scopolamin, are mixtures chiefly of three or possibly four alkaloids, two of which, atropin and hyoscyamin, are isomeric; the other two, if we adopt the views of O. Hesse, are also isomeric, although differing somewhat in atomic composition from the former. All have the property of producing extreme dilation of the pupil of the eye, but it is probable that no two exactly coincide in their physiologic or medicinal action.

There has been a good deal of confusion in the past in the nomenclature of these alkaloids. In the first place the alkaloids, and so the products of manufacturing houses, have generally contained more than one of the alkaloids. Atropin in particular has frequently contained a large proportion of hyoscyamin, while commercial hyoscyamin contains always some atropin. More serious than this, however, is the confusion that has arisen from the use of the term "amorphous hyoscyamin," applied to the residual alkaloid from henbane from which hyoscyamin has been removed. This residual alkaloid was rightly believed to represent the characteristic action of henbane as distinguished from that of belladonna, and, in fact, consisted chiefly of what is now commonly known as hyoscin, the distinctive alkaloid of henbane. When the crystallized hyoscyamin appeared physicians naturally supposed that it was simply a purer product, and they have been rather slow in discovering that in its action it resembles more nearly atropin than the amorphous hyoscyamin they had formerly used.

The confusion was increased when later a crystalline salt of hyoscin was produced, not from henbane, but from *Scopola atropoides*, and was offered under the name scopolamin hydrobromate. Then, finally, the physician learns that the principal alkaloid of the common European scopola is hyoscyamin, and he couples this fact with the information that has come to him that scopolamin is identical with hyoscin, and concludes,

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very naturally, that hyoscyamin, which he supposes is the distinctive active principle of henbane, is identical with hyoscin.

Now the facts are that: 1. Hyoscyamin is the most widely distributed of the mydriatic alkaloids, being found in belladonna, stramonium, henbane, duboisia, mandragora and scopola; in fact, in every solanaceous plant possessing mydriatic properties. It has been reported even as present in lettuce, a plant of a different family, but the announcement seems to want confirmation. 2. Hyoscin, on the other hand, while present in minute quantity in most mydriatic drugs, is an important constituent only of henbane and of *Scopola atropoides*. 3. Hyoscyamin is easily converted into atropin, so that it is the latter alkaloid rather than the former that is obtained by the ordinary manufacturing processes, even when the drug originally contained chiefly or only hyoscyamin.

I may add that chemists are not as yet wholly agreed as to the nomenclature of these alkaloids. There is no longer any disagreement regarding the names atropin and hyoscyamin, but some chemists prefer the name scopolamin to hyoscin, the latter having been originally applied to the "tropin" derived from hyoscyamin. O. Hesse, while adopting the name hyoscin for the distinctive alkaloid of henbane, finds that commercial scopolamin is a mixture of this with another isomeric alkaloid to which he gives the name atroscin, and his views are now widely accepted.

According to principles generally recognized in scientific nomenclature, the name hyoscin should be ruled out as having been originally applied to a different substance. The principle is "once a synonym, always a synonym." The later name, scopolamin, would stand next in succession, but to which of the two alkaloids should it be applied? The fact that scopolamin was identified with hyoscin before it was discovered that the former consisted of two different alkaloids should decide us to retain the name as synonymous with hyoscin, which name must be abandoned for the reason just given. It is true that from 40 to 80 per cent. of commercial scopolamin consists of the more recently discovered alkaloid, but that is no reason why we should not adopt the new name proposed for it by its discoverer. This name, atroscin, is, moreover, etymologically appropriate. It suggests the idea of kinship at once with atropin and with hyoscin—although the hyoscin in question is improperly so called. Dr. Hesse maintains that his atroscin is related to scopolamin (hyoscin, he calls it,) in precisely the same way that atropin is related to hyoscyamin.

This brings us to the question of the relation to one another of atropin and hyoscyamin. The two alkaloids have the same ultimate composition, the empirical formula of each being $C_{17}H_{23}NO_3$. The chemical behavior of the two is almost identical, but corresponding compounds differ materially in physical properties, and by taking advantage of such differences the alkaloids may, with some difficulty, be separated. Thus, of the aurochlorids, that of atropin is much less soluble in water, and accordingly when a solution of gold chlorid is added drop by drop to the mixed hydrochlorids of atropin and hyoscyamin the precipitate which forms at first consists almost wholly of atropin aurochlorid. The precipitate is amorphous, having a melting point of only 135 to 138 C. When crystallized from its solution in boiling water, acidulated with hydrochloric acid, it takes the form of minute crystals, which, after drying, are without luster. The corresponding compound of hyoscyamin forms a crystalline precipitate consisting of golden yellow scales which retain their luster after drying, and have a melting point of 160 to 162 C.

Atropin itself has a melting point of 114.5 C. and crystallizes in needles or minute slender prisms. Its solutions are optically inactive, i. e., they do not rotate the plane of polarization of a ray of polarized light. Hyoscyamin has a melting point of 108.5 C., considerably lower, therefore, than that of atropin. It crystallizes in very slender needles, frequently in radiating clusters. Its solutions turn the plane of the polarized ray strongly to the left. When hyoscyamin is heated to a temperature slightly above its melting point, or kept in contact with solutions of potassa, soda or even of ammonia, it is gradually converted into atropin.

The latest researches indicate that it is probably hyoscyamin which is formed at first in the plant in all cases. The flowers and young leaves and shoots of plants like stramonium or belladonna yield chiefly or wholly hyoscyamin. Mature plants and old roots yield mainly atropin. In the ordinary processes of manufacture no doubt a large proportion of the hyoscyamin is converted into atropin.

If it turns out that there is a decided difference in medicinal action between the two alkaloids, it will become a matter of importance at what season such a drug as belladonna is collected. Even soil and climate may be found to have a heretofore unsuspected significance in connection with these drugs. It has been recently observed that stramonium grown in Egypt contained no alkaloid but hyoscyamin. An Indian species of henbane, *Hyoscyamus muticus*, yielded also almost pure hyoscyamin, and the same plant grown in Egypt was found extraordinarily rich in that alkaloid. The European henbane yields, beside its characteristic alkaloid, scopolamin (or hyoscin), both atropin and hyoscyamin.

According to Dr. Hesse, scopolamin (hyoscin) corresponds with hyoscyamin; atroscin with atropin. Both scopolamin and atroscin have the empiric chemical formula $C_{17}H_{21}NO_4$. Scopolamin melts at 55 C. It rotates the plane of polarization to the left. It may probably be converted into atroscin by the action of alkalies, the latter alkaloid being optically inactive, and having a fusing point at 82 to 83 C. Since the views of Dr. Hesse are not universally accepted, I ought to state that the old view, that the so-called hyoscin from henbane is isomeric with atropin and hyoscyamin, is still held by some chemists, the relation which this hyoscin bears to scopolamin from *Scopola atropoides* remaining undetermined.

Regarding the chemistry of atropin and hyoscyamin, however, the facts, which are of unusual interest, are well established. By the action of alkalies or of mineral acids, the alkaloids are readily "saponified" or split into a basic and an acid constituent. This saponification or hydrolysis is most conveniently effected by baryta, and results in the formation of tropin and tropic acid according to the equation $C_{17}H_{23}NO_3+H_2O=C_8H_{15}NO+C_9H_{10}O_3$. Under the influence of acids the reaction is $C_{17}H_{23}NO_3=C_8H_{15}NO+C_9H_8O_2$, atropic acid being formed in place of tropic acid.

Tropic acid and tropin can be made to recombine, although the union is not precisely of the same kind as that between acid and base. What is more interesting and more important is the fact that tropin may be made to combine in a similar way with other organic radicals forming new synthetic alkaloids. Ladenburg, who first established these facts, gave to these alkaloids the gen-

eric name *tropeins*, this name applying equally to the natural and to the synthetic alkaloids.

The other alkaloids found in Nature associated with hyoscyamin and atropin are also tropeins, or else are similarly constituted so that they are saponified by the action of baryta, some of them yielding, instead of tropin, an isomeric base called pseudotropin. According to Dr. Hesse, scopolamin and atroscin yield instead of tropin the base oscin, to which he assigns the formula $C_8H_{13}NO_2$. In the older view these alkaloids also are tropeins. The important facts are that they are split up under the action of alkalies and of acids in the same way that the tropeins are, and that they act on the pupil of the eye in the same way that the natural tropeins do. This characteristic property, it is interesting to note, does not belong to all the artificial tropeins, although possessed in a high degree by some of them. Benzoyl-tropin dilates the pupil strongly; salicyl-tropin, differing from the preceding only in having in its molecule one more oxygen atom, produces no such effect.

Accompanying hyoscyamin and atropin in belladonna and other mydriatic drugs, there have been found the allied alkaloids belladonnin and atropamin. These differ from atropin in containing the equivalent of one molecule of water (H_2O) less. They are, therefore, distinguished as anhydro-tropeins. It is not certain that these actually exist in the drug. They may possibly be produced by the action of the chemicals used in extracting the alkaloids. They are split up by baryta into an acid and a basic constituent, the former isomeric with tropic or atropic acid, the latter isomeric with tropin, but differing from that base in its properties and called pseudotropin. An allied alkaloid, yielding by saponification benzoic acid and pseudotropin, has been found in coca leaves, although it appears not to be a constant constituent of these. None of these alkaloids, so far as I know, are mydriatic. Some of them act as powerful irritants when applied to the conjunctiva. None of them are known to have medicinal properties of importance and they do not form a large constituent of the alkaloids in any mydriatic drug so far as is yet known.

Of the mydriatic drugs, only three, belladonna, stramonium and henbane, are used to any extent medicinally in this country. The two former are generally considered to have practically the same medicinal action, differing only in degree. If a distinction exists it has not yet been made a subject of scientific analysis. The action of henbane, however, is without question quite different from that of belladonna. All three drugs contain the three alkaloids, hyoscyamin, atropin and hyoscin (or scopolamin), but in different quantities and in different proportions. Belladonna is believed to contain generally chiefly atropin, although hyoscyamin may sometimes predominate. Stramonium probably contains generally more hyoscyamin than atropin, although this may prove to be not uniformly true. Henbane contains relatively a much larger proportion of hyoscin (scopolamin) than either of the other drugs. Good belladonna leaves should yield of total alkaloids as much as 0.30 per cent., the proportion varying, however, between 0.1 and 0.5 per cent. or more. Belladonna root contains generally more alkaloid than the leaves, but the drug varies greatly. Stramonium leaves should yield 0.25 per cent. total alkaloids, the proportion ranging from 0.1 to 0.4 per cent. Henbane contains very little alkaloid. If it yields to assay 0.1 per cent. total alkaloids, estimated as atropin, it is of exceptionally good quality.

From the great variability of these drugs in strength it is exceedingly desirable that we should have reliable assay processes by which to ascertain their quality and that certain standards should be fixed by the pharmacopeia as minima of strength for each. Satisfactory assay processes are as yet a desideratum. As long as we are in doubt whether there is any important difference between the therapeutic action of hyoscyamin and that of atropin, the result of an assay that determines only total alkaloid leaves much to be desired. Particularly is this true when there are liable to be present also other alkaloids, such as atropamin and belladonnin, which are medicinally inert, or which may produce even undesirable effects. Under such conditions all that we can hope to learn from an assay is whether or not there is present a minimum amount of something which contains the active principle of the drug, and probably consists largely of that active principle. In view of the fact already stated, that specimens of the drug are often met with which contain less than 30 per cent. of the quantity of alkaloid ordinarily present, even such an assay is of distinct value.

But suppose an assay is made of belladonna leaf or of belladonna root, which are really not belladonna at all, but scopola—and this is a very common substitution—the drug will be reported to contain a normal amount or very possibly much more than the normal amount of alkaloid, with no hint that this consists mainly of hyoscyamin and not atropin. We have no method as yet of effecting a quantitative separation of these two alkaloids when dealing with the minute quantities obtained in ordinary assays, rarely more than 40 or 50 milligrams, but we may resort to the polariscope, and with a sufficiently sensitive instrument we may be able to determine approximately how much of the alkaloid is hyoscyamin, in absence of other optically active alkaloids. Much experimental work would have to be done before we could be sure that the results were trustworthy.

Possibly some satisfactory method may be devised of testing the strength of these drugs empirically, i. e., by the so-called physiologic method. We are certainly not in position as yet to devise any such method of testing. If it were possible to measure accurately the mydriatic action of the drug we should still have to determine accurately the mydriatic action of each of the alkaloids present, and it is easy to see that if there are more than two of these we shall have a greater number of unknown quantities than we have of equations.

The assay of henbane is still further complicated by the undoubted fact that the characteristic effect of the drug is produced by the third alkaloid, hyoscin (scopolamin), or by the combined action of this with hyoscyamin. The total quantity of alkaloids, moreover, is exceedingly small. The most we can hope to do is to ascertain whether the drug contains as much as a certain proportion of total alkaloid, but even this is not so simple a matter as at first appears. The alkaloids themselves are very easily changed by the action of the chemicals used in extracting them. The accidental presence even of a few drops of alkaline water during the final evaporation of the ethereal solution of the alkaloid may reduce the apparent yield 50 per cent. or more. After every precaution has been used to avoid change or loss of alkaloid, we have still the problem of determining how much alkaloid we really have. Our product is so impure that we can not rely on weighing it. We must ascertain its neutralizing power, and from this calculate the weight. But the neutralizing power of

hyoscyamin is not precisely the same as that of hyoscin (scopolamin), so that we must use a mean value or else report our alkaloid in terms of hyoscyamin, or of atropin, which amount to the same thing.

The polariscope can not aid us very much because both hyoscyamin and hyoscin (scopolamin) are levorotatory. There is one important difference probably. Hyoscyamin combines with a larger proportion of iodin than hyoscin under similar conditions. Possibly this may serve to show approximately the relative proportion of the two alkaloids, but this is a suggestion that must be worked out experimentally. Up to the present time we certainly have no satisfactory way of determining the therapeutic value of a sample of henbane, except by actual trial—the method that our fathers had to use before us.

I speak of these things, not to belittle the value of chemical assays. I am a firm believer in such assays. I have full confidence that science will overcome the obstacles that seem now almost unsurmountable; that the day is not far distant, indeed, when the particular difficulties which surround the assay of mydriatic drugs will have been conquered. But this can only be hoped for if we clearly understand the nature and the magnitude of the difficulties.

Recurring now to the tropeins as compounds of some organic acid with tropin, I call attention to the peculiar interest which attaches to the latter (basic) constituent by reason of its relationship with the organic base pyridin, and so with coniin and nicotin and with the decomposition products of cocain. It will not be profitable to enter here into the details of these relationships. It suffices to know that modern organic chemistry is rapidly mastering the intricacies of the molecular constitution of compounds so complex as the vegetable alkaloids.

That this knowledge is not purely transcendental, but capable of practical application, is proved by the fact that the chemist is able not only to reconstruct from its constituents, one of which he is able already to produce synthetically, the alkaloid atropin, but also to form new artificial alkaloids, one of which, homatropin, is already familiarly known as an article of the materia medica. Some of these synthetic alkaloids, as I have already said, have a strong mydriatic action; others little or none. A wide field is opened for useful experiment on their physiologic and possible therapeutic action.

Who shall pursue these researches and in what spirit shall it be done? Many of them will lead only to negative results. A few will lead to discoveries that will enable us to cope successfully with morbid conditions that now baffle our skill. Such rewards appeal to two classes: to men on the one hand whose profession binds them to unwearying, strenuous effort to possess themselves of every resource for the ministering to human needs; to men on the other hand who understand the commercial value of a new popular medicine. Which of these classes will be most likely to find the treasures that lie hidden in these new mines? Which will make such use of those treasures when found as will make the world richest through them?

The work, friends, is ours. To the toil it involves our lives are consecrated. To us alone is known the true value of the objects of this search. To us of right belong the honor and the glory of discoveries such as we hope for. It should be a shame to us to have to pay tribute to the mercenary explorer who has adventured more for gold than we for humanity—and the chance is that any such tribute is after all bare-faced imposition.

It is not alone the glory, it is the work, that is ours—patient, plodding, self-sacrificing toil, and the place above all others to do that work is right here in the Section on Materia Medica, Pharmacy and Therapeutics of the American Medical Association. It is our task; it is also our glorious opportunity. Let us see that the opportunity is improved.

THE PHYSIOLOGIC ACTION OF THE MYDRIATIC ALKALOIDS.*

HORATIO C. WOOD, JR., M.D.
Demonstrator of Pharmacodynamics, University of Pennsylvania.
PHILADELPHIA.

The number of drugs which dilate the pupil is so very large, and the physiologic relations of many of them so distant, that a consideration of all those substances which might be called mydriatics would not only consume much more time than is at our disposal, but would necessitate classing together of drugs not naturally so related. I shall, therefore, confine my remarks to those alkaloids which belong to the series of tropins; and for similar reasons of brevity omit the consideration of the synthetic alkaloids of this series, such as homatropin.

Before, however, taking up the consideration of the physiologic action of these substances, I wish to call attention to the very unfortunate confusion in the nomenclature of the active principles of the solanaceous plants. As various investigators have from time to time discovered in different members of this family alkaloidal principles, they have given new names to their discoveries, which in many cases were subsequently found to be identical with alkaloids already described. Thus, for example, the active principle of *Datura stramonium* has been called daturin, it being in reality atropin; scopolin is synonymous with scopolamin; while the active principle of *Duboisia myropoides,* known sometimes as duboisin, seems to be a mixture of hyoscin and hyoscyamin. There are four of these mydriatic alkaloids occurring in Nature which have become of practical importance to the physician: atropin, hyoscin, hyoscyamin and scopolamin. These group themselves naturally into two pairs, atropin and hyoscyamin, hyoscin and scopolamin.

ATROPIN AND HYOSCYAMIN.

As closely allied physiologically to atropin as it is chemically is the isomeric alkaloid hyoscyamin. This is perhaps the most widely distributed of all the solanaceous alkaloids; it occurs not only in both *Atropa belladonna* and *Hyoscyamus niger,* but also in the *Duboisia myropoides, Datura stramonium,* and especially in certain species of scopolia; while atropin is found chiefly in belladonna and stramonium. The frequent substitution of the rhizome of *Scopolia carniolica,* the dominant alkaloid of which is hyoscyamin, for belladonna, renders the question of the comparative effect of these principles of great importance.

It is to be noted that of these two plants belladonna contains hyoscyamin and atropin, the latter being the dominant alkaloid; while scopolia contains hyoscyamin and hyoscin. The amount of hyoscin, however, present in the rhizome of *Scopolia carniolica* is so small as to have little bearing on the physiologic action of this plant, notwithstanding the contrary assertion sometimes made

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by interested manufacturers. (This statement does not hold true of *Scopolia atropoides,* in which the dominant alkaloid seems to be hyoscin.) In an investigation which I made a year ago concerning the relations of *Scopolia carniolica* to *Atropa belladonna,* I was unable to detect any differences either between the action of hyoscyamin and atropin, or between scopolia and belladonna, except one of dose; and what I shall say of the action of atropin, therefore, applies also to hyoscyamin.

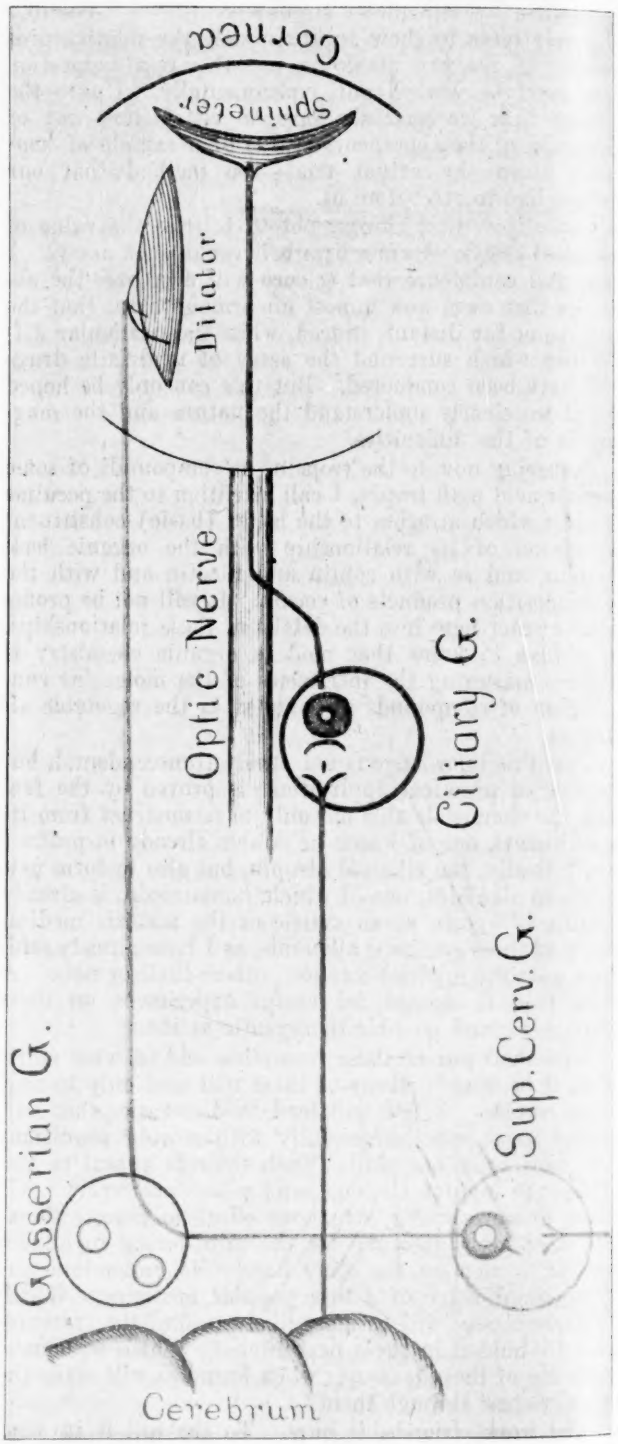
In generalizing the physiologic action of atropin the most characteristic effects seem to be a paralysis of the involuntary muscle fiber, a paralysis of the peripheral nerve endings and a peculiar stimulation of some of the higher nerve centers. The peripheral nerves which are most susceptible to the action of this substance are the cardiac inhibitors, the nerves regulating secretion and those which supply the pupils. Since we have grouped these drugs together on account of their action on the eye it is logical to consider this portion of the subject first.

Eyes.—Atropin has two effects on the eye: it dilates the pupil and paralyzes accommodation. These actions, although usually associated in the same drug, are not so of necessity. *A priori,* there is no reason why a drug might not either affect the pupil and leave intact the ciliary muscle, or vice versa, paralyze accommodation without alteration in the iris.

For the purpose of closer study of the manner in which atropin dilates the pupil, I have prepared a diagram representing the innervation of the eye, which will not only save a great deal of circumlocution, but perhaps make the subject clearer than a lengthy description. In the first place, we must remember that under the only condition in which it is possible to examine the eye, that is, in the presence of a certain amount of light, the sphincter pupillæ is always in a state of partial contraction. It is evident, therefore, that a drug may dilate the pupil, not only by stimulating the dilator mechanism, but also by paralyzing the contractor mechanism. If we glance for a moment at the diagram we see that these effects may be either on the centers governing these muscles, on the nerve trunks which carry the impulses from the centers, or on the muscles themselves. It is evident, therefore, that the pupil may be dilated, on the one hand, either by stimulation of the sympathetic ganglia, representing the dilator centers, or of the nerve which carries the dilator impulses to the muscle, or by a direct action on the radial fibers of the iris. On the other hand, the pupil may be dilated by paralysis of the contractor mechanism, the oculomotor centers in the brain, the oculomotor nerve which supplies the sphincter pupillæ, or, finally, by a direct influence on this muscle.

That the dilatation brought about by atropin is not dependent on any action on the centers is shown by the fact that when instilled into one eye it causes dilatation of the corresponding pupil without affecting the other. Since after application to the eye the atropin would be able to reach the centers only by being absorbed, and carried there through the general circulation, as after any other method of exhibition, it would necessarily be carried equally to both centers, and we would get a bilateral instead of a unilateral widening of the pupil. Further, Claude Bernard has found the mydriasis to occur in animals after section of the oculomotor, and H. C. Wood has seen it in man, both in cases of paralysis of the oculomotor nerve and of the sympathetic nerve, and, moreover, a number of observers have obtained dilatation of the pupil by atropin even when the eye has been completely removed from the orbit.

The drug, therefore, affects the pupil peripherally, that is, the dilatation is due to either an action on a portion of the nerve beyond the ganglia or else an effect



on the muscle. Bernstein and Dogiel found that electrical stimulation of the oculomotor nerve in cases of atropin mydriasis had no effect on the pupil, indicating again a peripheral palsy, but that when the electrodes were applied directly to the sphincter fibers of the iris the pupil was narrowed, showing that the muscle itself

had not lost the power of responding to stimulation. The dilatation, therefore, must be due to an action on the peripheral ends of the nerves.

The question as to whether the oculomotor nerve is paralyzed or the sympathetic stimulated is less easily answered. The fact that stimulation of the oculomotor fails to affect the atropinized pupil shows that this nerve is paralyzed; but whether or not the sympathetic is at the same time stimulated is a matter of some dispute. The fact that stimulation of the sympathetic, either electrically or by means of other drugs, such as cocain, is able to still more widely dilate the atropinized pupil, is brought forward as evidence that the sympathetic fibers are not stimulated by the drug. This, however, is by no means positive proof, for it is perfectly plausible to suppose that although atropin might have a stimulating effect on the sympathetic fibers, other measures could cause a still greater stimulation of these same fibers. It would be as logical to reason that because the combination of strychnin and atropin gives a greater increase in the respiratory movement than atropin alone that therefore atropin does not stimulate the respiratory center, as to reason that the sympathetic is not affected by atropin on the evidence given above.

Clinical experience in cases of adhesions within the eye shows that the dilatation of the pupil which occurs under atropin is more than a merely passive one, because it has force enough to frequently break up these adhesions. More than this, it has been found that when the eye has been completely separated from the body atropin is capable of causing dilatation of the pupil; and since in the removal of the eye the oculomotor nerve is entirely destroyed the further dilatation must be due either to a stimulation of the sympathetic terminals or a selective action on the radial muscles of the iris, which action is extremely improbable. We must conclude, therefore, that atropin dilates the pupil by paralyzing the peripheral end of the oculomotor nerve, and at the same time stimulating the terminations of the sympathetic.

Spinal Cord.—The effect of atropin on the higher nerve centers is a very complex one, and understood but very imperfectly. In the first place, every one knows that a large dose of atropin has some peculiar action on the brain, causing a wild delirium. Our knowledge of the brain, however, is not sufficient to allow us to determine more exactly the causes of this delirium.

Coming to the spinal changes, we note that although we find several theories to explain the effects of atropin on the spinal cord, our information is, after all, hardly definite enough to be called knowledge. To dismiss the question, as does one prominent text-book, with the remark that atropin affects the spinal cord like strychnin, not only avoids a perplexing problem, but is also a very inaccurate statement, for although there is, under the influence of atropin in the lower animals, a secondary stimulation of the spinal cord, more or less resembling a mild case of strychnin poisoning, the primary action of this drug on the reflex centers is widely different from that of strychnin. As was first discovered by Fraser, this early excitation is followed in the frog by a palsy so complete that in his earlier experiments Fraser thought the animal dead. Later, however, he showed that there was not only a return, but even a very distinct excitation of the reflexes. In other words, that atropin causes the following sequence of events: lessening of reflex activity, followed by paralysis, and followed again by excitement. Since pharmacology gives no instance of a drug which produces an exaltation of function after a primary depression, it is evident that atropin affects something more than merely the motor cells in the spinal cord. Fraser explained the series of phenomena by supposing that the spinal cord was excited from the beginning, but that in the early stage there was a paralysis of the motor nerves which prevented any impulses reaching the muscles; and that this paralysis of the motor nerves passed off more rapidly than the stimulation of the spinal cord, causing the appearance of the symptoms of excitation. Although it is true that a sufficient dose of atropin will paralyze the motor nerves in a frog, Ringer and Murrell have shown that protecting the nerve from the action of the poison by ligating the artery supplying it does not prevent the development of the paralysis, and that consequently the palsy is not dependent on any action either on the nerve or muscle. Moreover, in my own experiments, I have found that the time consumed in the spinal cord for the fulfilment of the reflex act is distinctly prolonged by atropin, indicating a lessening in the functional activity in the spinal centers.

The most plausible explanation of this peculiar sequence of events is that based on the supposition of the existence of a spinal inhibitory center. Of course, this is no time to discuss the truth or falsity of Setschenow's theory of spinal inhibition; suffice it to say that there are a number of pharmacologic facts inexplicable on any other hypothesis. We know that atropin paralyzes inhibition in the heart, and we know that atropin paralyzes inhibition in the intestinal tract, and it is only reasonable to suppose that it might also paralyze spinal inhibition. With the acceptance of this theory the explanation of the spinal action of atropin becomes a matter of comparative simplicity: there is first a paralysis of the spinal cord and also a paralysis of Setschenow's inhibitory centers. The paralysis of the motor cells does not last as long as the inhibitory depression, so that as the reflex centers of the cord regain their power the normal restraint is lacking and we have as the result a combination of abnormally exaggerated reflexes with muscular weakness.

Circulation.—The effect of atropin on the circulation is so well known that I shall dismiss it with but a few words.

Under the influence of the moderate dose of atropin there is a marked elevation of the blood pressure, accompanied by a very pronounced increase in the frequency of the pulse. The rise of blood pressure is due certainly in part to the increased heart action resulting from vagal palsy, but chiefly perhaps to the narrowing of the blood vessels. This is demonstrated by the fact that after previous section of the pneumogastric nerve atropin is capable of still elevating the blood pressure; and since after section of these nerves atropin has no effect on the pulse rate, the rise must be due to vasomotor stimulation. Furthermore, it has been shown that the drug is incapable of causing any considerable rise in the pressure after section of the spinal cord, that is, after destruction of the vasomotor centers; proof positive that the drug has a direct stimulating influence on the centers in the medulla controlling the blood vessels.

The increase in the work of the heart is due chiefly to the excessive rapidity of the pulse, which is dependent on removal of inhibitory restraint. That the

increased rate of the pulse is due to paralysis of the pneumogastric nerve is clearly proven by three facts: First, in those animals whose pneumogastric nerves are not in a state of tonic activity, as the rabbit, for example, atropin has little effect on the pulse rate; second, in those animals which, like man, have active inhibition, if the pneumogastric nerve is divided atropin is incapable of causing any distinct increase in the rate of the pulse; and, finally, electrical stimulation of the atropinized vagus does not slow the pulse.

It is probable, however, that the minute dose of atropin has a certain amount of stimulant influence directly on the cardiac muscle, for Beyer has found that the isolated heart of the terrapin is stimulated by small quantities of the alkaloid, and Langendorff brings evidence to show a similar effect on the frog's heart.

With this very cursory glance at some of the more prominent points concerning the physiologic action of atropin and hyoscyamin, we pass to the consideration of our second group.

HYOSCIN AND SCOPOLAMIN.

When we start to discuss the physiologic action of hyoscin, or rather before we start, we open a question on which there is so much disagreement that we can hardly claim to have any definite knowledge; indeed, even the existence of hyoscin is frequently denied, it being by many authorities considered to be identical with scopolamin. There seems to be but little doubt that in the majority of cases the substance sold under the name of hyoscin is in reality scopolamin; and there is certainly justification for the German Pharmacopeia in substituting for the name hyoscin the term scopolamin. Nevertheless, I am one of those who believe that there are two solanaceous alkaloids similar in their physiologic effects, and yet different enough to allow distinction, which have been known under the names of hyoscin and scopolamin. Both substances have, unfortunately, been called hyoscin, and as the true hyoscin seems not at present to be extant in commerce, what is to-day employed under the name of hyoscin is in reality scopolamin.

It is noteworthy in this connection that when Schmidt first asserted the identity of commercial hyoscin with the alkaloid scopolamin, he did not deny that the substance described by Landenberg might have been something else, and it is certainly taking a great many liberties with the work of an authority so well known as Landenberg to assert that his descriptions, both of the formula and of the properties of his discovery, were incorrect. There is both chemical and physiologic evidence of the separate identity of these two alkaloids.

Hesse has shown that certain specimens of scopolamin contain a substance with an optical rotary power muscle inferior to that of scopolamin itself. Louis Merck has brought confirmatory evidence to this discovery of Hesse's, in that he found that whereas the hyoscin prepared from hyoscyamus had an optical rotary power of 25 degrees, that from *Scopolia atropoides* had at times as low as 13.5 degrees; suggesting that in one or the other of them there was some other alkaloid which changed the effect of this substance on the rays of light.

Leaving out the chemical evidence we find that the physiologic evidence that there are two narcotic alkaloids belonging to the tropin series is sufficiently convincing. As far as I have been able to find, there have been but three careful complete researches on the action of hyoscin: those of Clausen, of Kobert and of H. C. Wood. All of these authors are in accord that hyoscin differs distinctly from atropin. For example, they all agree that it is not an excitant to the spinal cord; they agree that it is a somnifacient, although they are not unanimous concerning the power of its hypnotic action. It is interesting, however, to find that whereas the earlier researches, those of Clausen and Wood, showed throughout a fair degree of similarity, the later researches of Kobert differ quite widely from them in many respects. Thus, Clausen and Wood both found that the pulse was slowed by hyoscin in marked contrast to the effect of atropin; but Kobert, with full knowledge of the results of these investigators, and presumably exercising therefore even more than ordinary care, found that hyoscin affected the pulse precisely as did atropin, producing the same paralysis of terminal ends of the vagus. Moreover, whereas Wood found that comparatively small quantities of the alkaloid were distinctly depressant to the respiration, Kobert failed to obtain any lessening in the breathing, even with enormous doses. It is hardly possible that into the investigations of an experimenter of such ability as Professor Kobert, especially working as he did with knowledge of previous contrary results, there could have entered sufficient error to explain the differences of his results and those of the previous investigators; and it is equally illogical to suppose that the results of Clausen and Wood, one made in Europe and the other in America, at least one of the investigators being an acknowledged authority, would agree so closely in their results unless they had both been substantially correct. In the face of such contradiction the conclusion seems to me inevitable that Kobert had a different substance from that with which Wood and Clausen were working.

The clinical evidence of the separate identity of these two substances is also worthy of consideration. Both Wood and Kobert experimented on human beings concerning the effect of these substances on the brain; but whereas Kobert found that it was a comparatively feeble hypnotic, useful in only a minority of cases, Wood came to the conclusion that it was a hypnotic of considerable power. Every physician who has used hyoscin to any extent has noticed a very marked irregularity in its somnifacient action. At times it will seem to deserve a place among our most certain narcotics; on other occasions it will produce a condition more closely allied to the atropin delirium than to sleep. I myself believe that these differences can be most easily explained by the supposition that we are dealing with different substances.

In view of our ignorance concerning the identity of hyoscin and the dispute concerning its physiologic action, it is hardly possible to give in detail the physiologic action of hyoscin. In order, however, to consider the question of the action of mydriatic alkaloids in all its bearings, I shall very briefly point out the differences between atropin on the one hand and hyoscin as described by Wood and hyoscin as described by Kobert on the other.

It will be remembered that atropin is a powerful vasomotor stimulant; hyoscin, on the other hand, according to both the authorities quoted, exercises at no time any stimulant effect on the blood pressure. According to Kobert even enormous quantities have absolutely no effect on the blood pressure; but according to Wood, if the dose is large enough there is some weakening of the vasomotor centers. On the pulse rate Wood has found that hyoscin has not a great deal of effect, but tends somewhat to slow the pulse. On the other

hand, Kobert has found that the alkaloid overcomes the inhibitory stimulation of muscarin, and produces in the dog and in man an atropin-like paralysis of inhibition with consequent rapidity of the pulse.

Another difference between the actions of atropin and hyoscin is in their effect on the higher nerve centers. All authorities agree that under hyoscin there is lacking the primary stimulant influence of the central nervous system characteristic of atropin. According to Kobert, with the exception of the brain, hyoscin has no effect on the nervous system. On the other hand, Wood has found that hyoscin is distinctly depressant, not only to the brain, but also to the respiratory centers and to the motor side of the spinal cord.

In this very brief summary of some of the more vital points concerning the pharmacologic relations of the solanaceous alkaloids I have endeavored to present as fairly as possible the true state of our information, not attempting to hide our ignorance under the cloak of any unproven theory however ingenious and attractive it may be. It is painfully evident that there are many gaps in our knowledge of these principles; gaps which unfortunately limit their usefulness as practical remedies. The helplessness of the clinician to supply this lack in our knowledge is but another evidence of the value to practical medicine of scientific research. Until the scientist shall have demonstrated beyond cavil the chemical identity and the physiologic properties of these alkaloids, the practical physician, unable to know certainly what he is giving, can not expect to obtain definite therapeutic results from their use. And yet, many of these alkaloids seem to possess virtues which would make them extremely valuable to the physician if more clearly understood, and there is to-day as urgent need of careful scientific study of the mydriatic alkaloids as perhaps of any other group of drugs which are employed for the purpose of alleviating human suffering.

THE MYDRIATIC DRUGS AND THEIR ACTIVE PRINCIPLES.

THE OPHTHALMOLOGIC RELATIONS.*

CHARLES A. OLIVER, A.M., M.D.
PHILADELPHIA.

The drugs spoken of as mydriatics are ophthalmologically divisible into four classes—analgesics, mydriatics, iridoplegics and cycloplegics. They receive their generic name from the most prominent objective sign that is produced by their action. By reason of their many-sided effects they are the most valuable diagnostic and therapeutic agents which are employed in ophthalmic practice, the effects being mainly dependent on varying grades of true peripheral palsy.

They always act locally. This has been proven by the application of mydriatic-containing aqueous humors to other eyes, and by the action of the drugs after excision of the heart, after decapitation and after isolation of the eyeball. Further proof of their local action is shown by their increased activity after removal of the external layers of the cornea. Moreover, local applications never affect the fellow organ in a similar way.

Most prominent among the mydriatic agents are: holocain, cocain, eucain, euphthalmin, homatropin, mydrin, atropin, scopolamin, daturin, hyoscyamin, hyoscin and duboisin.[1] As is well known, many of these alkaloids, although differing by but one or two elemental atoms each, or even when absolutely isomeric, have variable physiologic actions on one and the same series of ocular structures. So, too, with the supposedly identical alkaloids derived from the same genus of plants grown in various countries, under varying conditions, or when obtained from one and the same plant at different ages. These peculiarities of action are probably dependent on idiosyncrasies of molecular arrangement of the same number of contained elements, the relative optimal and subinvolutional conditions of the contained cell-forms, and the variability of the ocular structures.

The only true method of differentiating these effects and grading the relative degrees of therapeutic usefulness of the drugs is to study their comparative powers on the excessively rare normal emmetropic eye or on the carefully corrected and healthy ametropic organ; a plan which gives a series of known factors on which to base desired effects on irritated, inflamed, and at times, weakened tissues.[2]

The chief effects of this class of therapeutic agents on the eye consist in external and internal analgesias combined with local paralyses of the sphincter muscles of the iris and ciliary body. By some observers most of the drugs (particularly atropin, daturin, scopolamin, hyoscyamin and duboisin) are supposed to exert simultaneous excitatory actions on the radiary fibers of the iris and the ciliary body. Some of the drugs are said to contract the blood vessels and to act on the peripheral ends of the nerves. A number of authorities believe that cocain-, holocain- and eucain-mydriases are due to local irritation of the sympathetic nerve endings in the iris (both vasoconstrictor and pupil-inhibitory fibers).

The local effects of the drugs are increased by bodily rest, with non-usage and non-exposure of the ocular organs. Cold applications diminish both the primary and secondary actions of the drugs. Heat tends to promote both of these results.

While the drugs are in use, colored glasses—preferably smoke-tinted coquilles which are free from blemishes and optical imperfections—should be worn. The degree of tinting should be regulated by the feelings of the patient and the conditions of the case. All of the solutions should be freshly prepared in small quantities, made neutral and kept only for brief periods of time. Some ophthalmologists prefer to add boric acid or some preservative to the solutions, but this is not necessary if the above rules are followed. During the instillation of the drugs care should be taken to prevent their passage into the lacrymal and the nasal passages.

The drugs which are employed for the definite and determinate purpose of pure mydriasis in ophthalmology are comparatively few. In the writer's hands they are limited in the order of their relative values to the following: euphthalmin, homatropin, mydrin and ephedrin. Used in the strict sense of the term they serve an im-

* This abstract of the original paper, read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, is approved for publication by the Executive Committee: Drs. A. W. Baer, A. B. Lyons and W. J. Robinson.

1. Several other less frequently employed alkaloids, delphinin, solanin, etc., are not considered here. A number of experiments with the biborate and the salicylate of solanin have been conducted by the writer, but the results are reserved for a paper on another subject. The writer has not considered drugs, such as gelseminin, coninin, aconitin, which produce local effects on the eyeballs and their related structures by ingestion and topical application elsewhere, even when they are thus intended; for example, the internal administration of hyoscyamin for spastic conditions of the interior and exterior ocular muscles. Such drugs as strychnin and curare also have not been considered.

2. In the tests which have been conducted by the writer similar conditions in regard to illumination, time of day, condition of eyes, form of apparatus, and choice and use of drugs have been maintained.

portant purpose by permitting a broader view of the interior of the eye.

Euphthalmin is usually employed in the form of the hydrochlorate. Two drops of a 5 per cent. strength solution produce almost a maximal mydriasis, which lasts some two or three hours, and which is maintained under strong light stimuli, the pupil returning to its normal size in from twenty to twenty-two hours' time. The action of the drug on the ciliary muscle is very slight, a similar amount of the same strength solution evidencing its primary weakening influences on the power of accommodation in from ten to fifteen minutes' time, the maximum effect being reached in sixty to eighty minutes, and the last remnants of action not ceasing until five to seven hours have elapsed.

The drug is the best agent which we possess for pupillary dilation for ophthalmoscopic diagnosis. It is more powerful than mydrin. It is slower than homatropin in its action, yet its effects pass away more quickly, and it neither degenerates the corneal epithelium nor possesses any irritative or general intoxicant effects.

Homatropin, a mandelic ether of tropin, is generally used in the form of the hydrobromate. It is prepared synthetically. In 2 per cent. strength solutions it is used as a mydriatic. (In greater strengths, or by repeated instillations, it is employed by many as a cycloplegic for the estimation of refraction. For this purpose many ophthalmologists instill two drops of a 1 to 4 per cent. strength solution into the conjunctival sac every five or ten minutes until three or four instillations have been made, examining the eye for lenses in thirty minutes' time after the last instillation. These strengths of the drug employed in this manner will produce palsy of the ciliary muscle which will last at least sixty to ninety minutes, recovery usually taking place in about forty-eight hours' time.)

For mydriatic purposes, one drop of 1 to 500 strength solution instilled into the conjunctival sac every five minutes until five instillations have been made will produce a maximum effect of dilation on the pupillary area in from three-quarters of an hour to an hour's time, the pupil commencing to dilate in from six to fifteen minutes and returning to its normal size in about fourteen to eighteen hours' time.

(Its effect on the iris and the ciliary muscle is increased by the addition of cocain. This can be accomplished by placing one-fiftieth of a grain each of the two drugs in discs which are allowed slowly to melt on the conjunctival surface, and from thence to be absorbed into the interior of the organ. Oleaginous menstrua and oily excipients hold the drug in position for a longer time and thus increase the amount which is absorbed into the interior of the eyeball.)

In some cases, the mydriasis produced by this drug will partially disappear temporarily when the subject is placed under the influence of a general anesthetic.

Mydrin is an artificial preparation composed of one part of homatropin hydrochlorate to one hundred parts of ephedrin in a 10 per cent. strength aqueous solution. Applied to the conjunctiva the pupil begins to enlarge in from six to ten minutes' time, dilating to a maximal size of some 4 to 7 millimeters in about thirty to thirty-five minutes. Twenty to twenty-five minutes later the enlarged pupil begins slowly to diminish in area until in from four to six hours' time all artificial mydriasis has disappeared. This mixture is much more effective as a mydriatic agent than either of its constituents in their uncombined proportions. Powerful light stimuli, forced accommodation and strong convergence impulses either exerted separately or in association will give rise to iris-play with slight pupillary contraction. (The belief that the drug does not exert any paretic action on the ciliary muscle is untrue. Repeated experiments in regard to this question by the writer have conclusively shown the loss of one, and even of two, diopters of accommodative power gradually taking place in about eighteen to twenty minutes and passing away slowly in from six to eight hours' time.)

Such a drug, therefore, is useful for mydriasis of brief duration, rendering it valuable as an adjuvant for diagnostic purposes.

Ephedrin is an alkaloid which is derived from *Ephedra vulgaris*. One or two drops of a 2 per cent. strength solution will give rise to almost complete mydriasis in an unirritated and healthy eye in about fifty minutes' time. (The action on the iris can be noticed in about eight minutes and lasts for eleven or twelve hours. There is a very slight effect on the ciliary muscle, and, as a rule, there is not any increase of intraocular tension.)

The writer has successfully and usefully employed this drug in weak solutions for partial pupillary dilation for diagnostic purposes. In a series of unpublished experiments with single instillations of the one-hundred-and-twentieth, the one-sixtieth, the one-fortieth, the one-thirtieth, the one-tenth and the one-fifth of a grain of the hydrochlorate salt, he has found both corneal and conjunctival analgesia preceded by slight hyperemia with the stronger percentages, and irregular pupillary dilation (from four to five millimeters with the weaker strengths, and from seven to eight millimeters with the stronger ones); all appearing in ten to fifteen minutes and lasting from twenty to thirty hours. With most of these amounts there was a series of definite recessions of the near-point, these being obtained at periods averaging thirty to forty minutes after the use of the drug. No general symptoms, except an increase of the pulse-rate in a few minutes and a slight frontal headache in a case or two could be noticed.

In combination with homatropin the drug acts more rapidly and with increased energy.

DISCUSSION

ON THE PAPERS OF DRS. LYONS, WOOD AND OLIVER.

DR. A. W. BAER, Chicago—I regret that the members of the Section on Ophthalmology could not have been present to hear these papers. I do not know any other class of drugs which are used as commonly and as indiscriminately as the mydriatics, or which, when carelessly used, are capable of leaving such bad effects. I can recall cases in which mydriatics have been used to dilate the pupils, and I do not believe that the patients have ever regained the full use of their ciliary muscles. Atropin acts directly on the neuron and alters its condition so as to produce paralysis, which, at least to some degree, may be permanent. I hope that this point will be brought out more fully in the remarks of other speakers who have more experience in this class of drugs.

DR. W. J. ROBINSON, New York—There can be no question with regard to the occasional bad effects following the use of mydriatics. This may be accounted for by the bacterial contamination, or infection, of the stock solutions which physicians keep in their offices. This is not merely a theoretical assumption, but has been made the subject of positive demonstration. Many practical suggestions have been made in order to prevent this contamination. For instance, boric acid has been used, a few grains being added to the stock solution; but it is not always desirable or suitable and, besides, its antiseptic power is slight. Many other antiseptics have also been tried. I think the preferable plan is to make the stock solution with

45 per cent. alcohol, for in this medium the alkaloids will keep very well. Other solutions of any desired strength can be made extemporaneously, by adding recently boiled distilled water. In the *Correspondenz-Blatt fuer Schweizer Aerzte*, there recently appeared a very complete review of this subject, in which the writer, after considering the various methods which had been proposed, spoke approvingly of this solution with alcohol (45 per cent.). In it the alkaloids do not undergo any change. Some of the stock solutions have been kept as long as seven months, and have shown no signs of decomposition or alteration.

DR. A. B. LYONS—The last paper illustrates what I attempted to show, that in prescribing these articles by their names, atropin, hyoscyamin, digitalin, hyoscin, scopolamin, etc., it is necessary to consult first with the chemist in order to ascertain what these articles really are, and whether they consist of the pure alkaloids, or whether they are a mixture of several principles and, if so, in what proportion. If it is found that they contain only one alkaloid, we must find out just which one it is; atropin, hyoscyamin, hyoscin, etc. These are among the most variable of substances known to the chemist. Unfortunately, unless special care be taken, the experimenter with these drugs will be in this precise predicament. He buys an article, like scopolamin, for instance, and he gets commercial "scopolamin" and not what the chemist would call by that name. In the same way the physician may prescribe one of these alkaloids for his patient, to be compounded in a capsule, but, after doing so, he is not in a position to say exactly what was really used in making that capsule, or what its effects should be on his patient.

DR. H. C. WOOD, JR.—I wish to emphasize the remark just made by Dr. Lyon, that in prescribing this class of drugs we do not know exactly what we are using. Physicians very commonly use the solanaceous plants, but I am sure that frequently they do not know precisely what they are giving to their patients even when they order the alkaloids. Dr. Robinson has spoken about sterilizing the solutions in order to ensure the permanency of the drug. This is a very necessary procedure. I had a very instructive experience illustrating this point. I had a bottle of atropin, obtained from one of the most reliable houses in Philadelphia, and from it I made solutions for use in experiments. Not having occasion to use it for several months, it remained unopened on the shelf, until I had occasion to make some control experiments with atropin. I made a fresh 2 per cent. solution and injected an ordinary dose into a dog, but got no characteristic effect, even after greatly increasing the dose, beyond dilatation of the pupil. I made a fresh solution, with the same negative result; I could get no atropin reaction whatever. I concluded that the drug had undergone some change, probably from bacterial action, although the bottle had been tightly corked. The contents of the bottle had become completely changed without giving any evidence to the eye. The same change may occur in the stock of the druggist. Therefore, I have very little confidence in supplies from the ordinary druggist and I do not think that we get exactly what we ask for when we prescribe these mydriatic alkaloids. If we ask for scopolamin, we may get hyoscin; if we ask for hyoscin, we may get scopolamin or hyoscyamin.

The Importance of the Prognosis.—The late Professor Gerhardt of Berlin used to say "the prognosis is the highest and ultimate achievement in the art of medicine as it presupposes everything else. The prognosis is based not only on knowledge but also on skill made possible by natural gifts and acquired by experience. It also has to take into account the sum of the personal properties of the patient, usually styled the 'resisting power.' This is the point in which the experienced family physician frequently surpasses the learned specialist. How differently, for example, is pain borne by different persons, bravely and unflinchingly by one, with an agonal expression by another. When the physician is certain of his prognosis, courage to proclaim it should come with it. It is easy to avoid mistakes by saying nothing. He who does not shoot at all will not miss the mark. But neither will he ever become an expert marksman."

THE EARLY APPEARANCES, DIAGNOSIS AND TREATMENT OF TUBERCULOSIS OF THE UPPER AIR TRACT.*

WALTER F. CHAPPELL, M.D.
M.R.C.S. Eng.; Surgeon, Manhattan Eye, Ear and Throat Hospital.
NEW YORK CITY.

The subject embraced in the title of this paper is really too important to be fully considered during the time at my disposal, and can therefore only be treated briefly from a somewhat personal standpoint. At one time I thought any one who had ordinary opportunities of studying tubercular manifestations on mucous surfaces could have little difficulty in recognizing their appearance in the upper air tract. Some mistakes on my part, and a wider experience in this branch of our special work, have changed the views I formerly held, and I now consider it most difficult and I might almost say impossible to arrive at a correct diagnosis in certain cases. Of course, this does not refer to patients who have all the typical, local and general symptoms, but rather to those where they are absent and the conditions simulate some other affection. No part of the respiratory tract is immune from tuberculosis, but certain points in the upper air passages seem more liable than others. These in order of frequency are the larynx, pharynx, trachea, tongue and nasal chambers. If time permitted it would be most interesting and instructive to consider what determines the special localities, and by what means the infection is conveyed. We can not stop for this now, and must hasten on to the text of the paper.

THE THREE STAGES OF THE DISEASE.

We have to make a diagnosis at three distinct stages of this disease as it occurs in the larynx.

1. The premonitory or pretubercular stage.
2. The stage of infiltration or thickening.
3. The stage of ulceration.

Is there a premonitory stage, and can we recognize it? I certainly believe that more or less definite symptoms precede every local deposit of tubercle in the larynx, but as they are not pathognomonic they can not be depended on. Many catarrhal inflammations have a close relation with tuberculosis on mucous surfaces, but it is often difficult to determine whether they are cause or effect. I have frequently seen a profuse and intractable laryngeal catarrh or laryngorrhea continue for several months in a tubercular patient before there were any definite symptoms observable in the larynx. Local pallors have for years been named in text-books as an early sign of tuberculosis. I can not agree with this statement, as the majority of my cases did not present this condition. In a great number of cases of pulmonary tuberculosis, which I have had an opportunity of observing in private practice and at the Loomis Sanitarium in Liberty, the mucous membrane of the soft palate, larynx and pharynx was extremely pale. This condition remained to my personal knowledge from two to six years without any deposit in the upper air tract. We would naturally think that impaired nutrition, local anemias or catarrhal inflammations of a mucous membrane would make it more susceptible to any infections, but I do not believe that any of these conditions alone or combined would determine a tubercular infection, but that a personal equation must always be considered. Recurring and persisting hyperemias, infiltrations and

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*Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

tumefactions are, in the writer's experience, the most usual and characteristic signs of early laryngeal tuberculosis. They appear as patches or may involve the whole interior of the larynx. The interarytenoid space, ventricular bands, posterior third of vocal cords and epiglottis are the usual places for early circumscribed infections. Any of the enumerated symptoms, occurring in the situations described, should cause some anxiety and a careful watching of their progress, and especially so if pulmonary tuberculosis already existed. These symptoms may be present, however, without being tubercular even in a tuberculous patient. Cold, rheumatism and voice strain will produce laryngeal redness and thickening, which may continue at intervals for years.

One of my patients, a lady, had an acute interarytenoid folliculitis every winter, and occasionally during the summer, for ten years to my personal knowledge. It was accompanied by great local thickening of the mucous membrane and some edema over the arytenoid bodies. During several unusual severe attacks small strips of ulceration appeared, but healed after the acute symptoms subsided. For several years I feared a tubercular infection, and other physicians who saw the case expressed the same opinion. As time passed these fears proved unfounded, and I constantly see this lady in perfect health, other than occasionally suffering from the attacks described.

Another case, showing the difficulty which often confronts us, is that of a Mr. G., who consulted me for a hoarseness he had had for three months. He caught cold and became hoarse for the first time in his life, and although the other symptoms of cold subsided the hoarseness continued. I found him a fine specimen of manhood, with a perfect family and personal history. The mucous membrane of the interior of the larynx was a brick red color, slightly paler over the vocal cords and possibly a little thickening of the ventricular bands.

From the history and in the absence of any chest symptoms and negative sputa reports I consider the case one of neglected laryngitis. He remained under my treatment for about three months, with some improvement, and as summer arrived I sent him to the mountains. He returned to the city in September with more hoarseness, considerable cough and slight rise of temperature and pulse and a loss in weight of four pounds. The mucous membrane of the larynx was much redder and more thickened, especially in the center of the right ventricular bands and had the appearance of a tubercular larynx, although no bacilli were found, and the examinations of the chest were negative. A month later he had a profuse tracheal and bronchial catarrh and a few bacilli were found in the sputa and urine. From this time the disease made rapid progress, and six months later the patient died of laryngeal, pulmonary and renal tuberculosis.

If clinical facts and ordinary skilled observations can be depended on, it does seem that this infection primarily occurred in the larynx, and the first symptoms observable were general redness and tumefaction. Small papillomatoid excrescences in the interarytenoid space are considered by some as pathognomonic of tuberculosis. This belief is erroneous, as I have frequently seen a similar condition in syphilis and chronic laryngitis. A greyish appearance in the posterior commissure is also very puzzling at times. It may result from a thin tenacious mucus covering the surface, or a smooth fibrous-looking membrane resulting from voice strain or a superficial tuberculous deposit. The latter has a decided edematous appearance, the papillæ in the arytenoid space stand up as small pyramids covered with a mantle of grey. Small ulcerations soon develop between the papillæ, but as time progresses and the periods of activity and quiescence occur, larger ulcers form. In some cases efforts at repair produce excessive granulation tissue, which at times become so large as to be designated as tubercular tumors. The nature of these masses are difficult to determine when seen for the first time, but, if tubercular, there is always a history of pulmonary and laryngeal diseases, extending over some years.

STAGE OF EDEMA AND ULCERATION.

An edematous or semi-solid appearance of the mucous membrane is usually a precursor of tubercular ulceration, especially when it occurs over the arytenoid cartilages, ary-epiglottic folds and epiglottis, and at times the swelling is so great as to seriously interfere with respiration and deglutition. Small points of ulceration soon follow and after coalescing give the so-called characteristic worm-eaten appearance. Superficial inspection, in my belief, is most likely to cause the described conditions. The single, large, deep tubercular ulcer is rather infrequent and occurs on the ventricular bands and in the arytenoid space, and results from a deep lymphatic infection. Syphilitic ulcers may occupy the same locations as tubercular ulcers, and at times it is difficult to distinguish them by their macroscopic appearance. As a rule the syphilitic ulcer is large, although it may be small and multiple in the secondary stage. It spreads rapidly and appears more quickly after the first laryngeal symptoms. That is to say, there may be a history of hoarseness for a few days only and on examination a large ulcer is found.

In tuberculous ulceration there is always a long history of hoarseness or pain with other laryngeal symptoms running a chronic course. Pain is an important diagnostic symptom and I do not believe much tubercular ulceration can occur without pain on swallowing. On the contrary, a very large syphilitic ulcer may be present without pain. The characteristic appearance of a tubercular ulcer will be described later on, as the opportunities for observing it are better in the pharynx.

PHARYNGEAL TUBERCULOSIS.

The pharynx, in my experience, is the next frequent location for tubercular invasion. Time will not permit me to discuss the so-called latent tuberculosis of the tonsil, and I will confine my remarks to observations of parts giving the usual clinical symptoms. The pharyngeal infections are usually secondary to pulmonary and laryngeal tuberculosis.

I have seen a number of such cases pass upward along the lateral pharyngeal folds from the larynx and rapidly invade the pillars of the fauces and soft palate, and in many instances the lymphoid tissue at the base of the tongue.

I have several times had the opportunity of watching these cases from the beginning to their termination and the process of invasion is very interesting. The mucous membrane has first a pearly grey tense appearance, but within forty-eight hours is covered with minute yellow spots, such as seen in Figure 1. At first these spots had a thin covering of epithelium, but within twelve hours this broke down and bright yellow, curdy-looking secretion dotted the surface. This was easily brushed away, leaving extremely small openings plugged with yellow secretions. As soon as this secretion appeared the mucous membrane lost its tense edematous appearance. Within a week the small ulcerations coalesce, leaving large irregular ulcerating surfaces. A case

of primary pharyngeal tuberculosis[1] was of great interest and the local conditions are well demonstrated in Figure 2. This infection followed an operation for the removal of adenoids in a girl of 19 years of age, and proved rapidly fatal. Within a year another case has come to my attention, which had many remarkable features, and seemed to have primarily started in the pharynx. Later, however, it was discovered that the kidneys were the seat of a tuberculous process. This, of course, raised the question of the throat being secondary to the renal infection.

This patient had a slight sore throat in August, 1901, which made its appearance as an unhealthy greyish-looking membrane, covering the left tonsil, and soon the right tonsil was also involved. A diagnosis of diphtheria and later syphilis was made. After six weeks the temperature began to rise, and the ulceration extended up on the left side to the soft palate. Tubercle bacilli were now present in great abundance. Several of the best known physicians in New York reported that their examination of his lungs revealed no disease. His death resulted from uremic coma, and emphasizes the

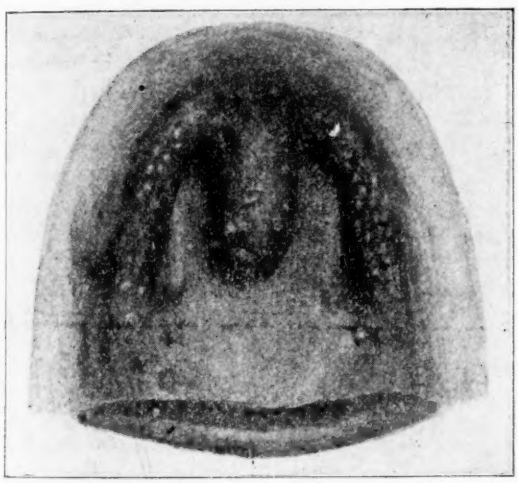

Fig. 1.—Secondary pharyngeal tuberculosis.

importance of a careful urinary examination in all tubercular cases.

TRACHEAL TUBERCULOSIS.

This is more often present than is generally supposed, and I have many times found a tracheal ulcer which had not been suspected. The difficulties surrounding a thorough examination of the trachea are very great and sometimes can not be overcome. Tubercular ulcers are usually found on the anterior wall of the trachea just below the vocal cords.

The symptoms produced are a constant burning or a tickling sensation, referred to this region, accompanied by a violent explosive cough. It is not unusual for ulcerations to attack the rings of the trachea, and in these instances small pieces of cartilage may be expelled by coughing. If the local manifestations can not be seen in the trachea the symptoms just described would make us reasonably sure of the diagnosis.

TUBERCULOSIS OF THE TONGUE.

It has been customary to state that lingual tuberculosis is rare, and this is true of primary infections, but does not apply to secondary cases. During the past six years I have seen fifteen cases of tuberculosis of the tongue, fourteen of which were secondary and one I believe primary. Much scepticism exists as to the possibility of a primary infection in any part of the upper air tract. I want, however, to go on record as a believer in the possibility of this occurrence.

A secondary lingual infection is usually a late manifestation of a laryngeal and pulmonary disease. It makes its first appearance as a small isolated greyish

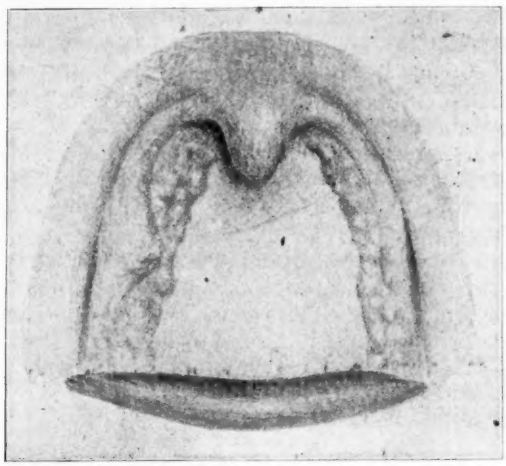

Fig. 2.—Primary pharyngeal tuberculosis.

nodule in the situation of some previously recognized abrasion. This nodule soon breaks down into a painful ulcer, which appears flat and irregular in shape, or as a deep fissure. In either case there is no surrounding infiltration and the margins of the ulcer adhere closely to the underlying surface, and if separated the tubercular process will be seen to burrow beneath the mucous

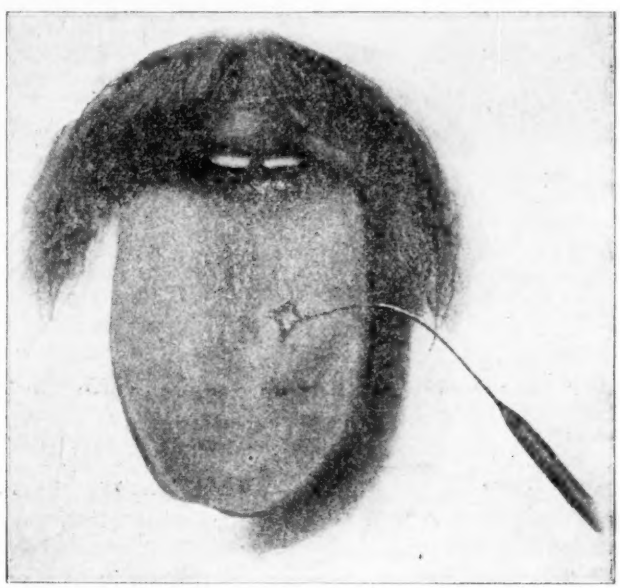

Fig. 3.—Secondary tubercular fissures of the tongue.

membrane and in some instances to the extent of a fourth of an inch. This condition is well shown in Figure 3, and is a marked contrast to the lingual fissure in Figure 4. The latter is a representation of a syphilitic fissure in a patient who innocently contracted the primary sore on the lip. You will notice the entire absence of any burrowing character to these fissures.

The base of a tubercular ulcer can be carefully studied on the tongue, and we find it consists of a pearly grey glistening membrane, which is adherent closely to the

1. Reported in the New York Medical Journal, Sept. 19, 1896.

underlying tissues, and differs so entirely from other ulcerations that I believe it is characteristic of tuberculosis on mucous surfaces. The tubercular fissures cause a great deal of pain, which is more or less intermittent, depending on the activity or quiescence of the disease. Figure 5 represents what the writer believes to be an instance of primary invasion on the tongue.

Mr. D., age 30, had no family history of tuberculosis and descended from an exceptionally strong and sturdy family, and his personal history was also good. Four years previous to my seeing him he was under the care of a dentist, for about ten days, having his left upper molar prepared for filling. Two marginal points of the tooth were exposed and were very sharp during this time, and Mr. D. was in the habit of touching the points with the tip of his tongue. The latter soon became sore, and an examination showed a red elevation with a fissure on its surface. This gradually increased in size, and some two weeks later the surrounding mucous membrane became puffy and the fissure gradually enlarged and presented a small, painful ulcerated surface. Medical advice was sought, and various applications were recommended and employed for a year or more. During this time the ulcer spread and embraced the entire tip of the tongue, chiefly on the right side. His general health remained good and he continued at his usual business.

Fig. 4.—Secondary syphilitic fissures of the tongue.

The tongue, however, became so painful that he consulted a surgeon, who removed a piece of tissue embracing the ulcerated surface. Microscopic examination revealed the presence of tubercle bacilli. The day following the operation Mr. D. noticed a small white spot on the mucous membrane near the former ulcer. The cut surface of the lingual wound granulated, but the margins did not adhere. Two months after the operation the small white spot already referred to became an ulcer, and gradually spread until in eight months it extended over the entire surface of the original operation. Four months later his voice became husky, owing to infiltrations in both arytenoid cartilages and the interarytenoid space, and he could speak only in a whisper. It was two years after the tongue affection before any pulmonary disease was discovered, but at no time was this extensive.

NASAL TUBERCULOSIS.

A tubercular ulceration on the anterior part of the triangular cartilage of the septum is by no means rare, but I have only observed two cases in other parts of the nasal chambers. The infection is very slow in progress and produces few, if any, symptoms which would point to the presence of an ulceration. A perforation is often the first evidence we have of its presence.

MEDICINAL TREATMENT.

The pessimistic views of some writers seem hardly justified in the light of our present results. Personally I believe that a great deal can be done for these cases if we are willing to give the necessary thought and attention to each individual patient, and not treat them all as a class to receive one line of treatment. I will not repeat the remedies and methods recommended by other observers, but confine my remarks to personal experiences. For clearness we may divide the treatment into medicinal, surgical and climatic.

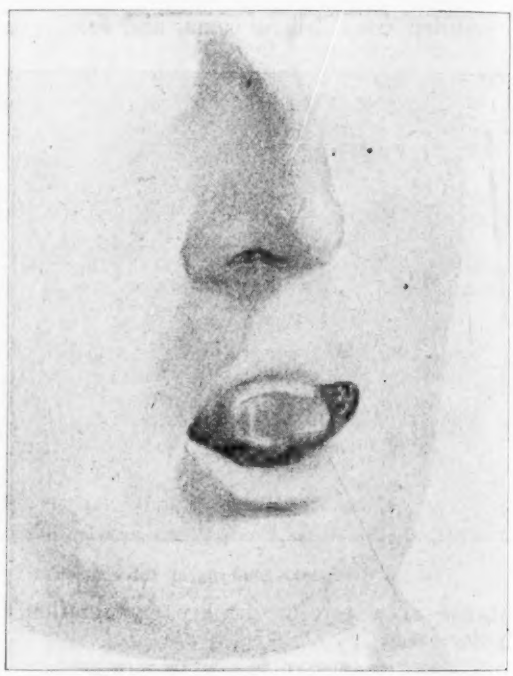

Fig. 5.—Primary tuberculosis of the tongue.

In the early stages, when only redness of the larynx exists, soothing sprays and warm inhalations, followed by mild astringents, should be employed. When congestion is combined with thickening a spray of adrenalin should be added to the treatment, and in marked cases of thickening submucous injection of lactic acid or creosote may be used. These injections should be given only during the quiescent stage and not while there is any temperature, indicating pulmonary or laryngeal activity. In ulcerative conditions I strongly urge that no irritative applications be used during any active process, but rely entirely on soothing and cleansing sprays and applications of iodoform and fluid benzoin. As a warm inhalation the following:

℞.	Iodoform	grs. iv
	Menthol	grs. iv
	Chloral hyd.	grs. iv
	Fluid benzoin	ʒi

The benzoin preparations are of special value for applications in the larynx, as they cling to the mucous membrane for hours and keep the medication in con-

tact. During an interval of quiescence the ulcerations may be treated more actively with 25 per cent. solution of lactic acid, or the No. 2 creosote solution recommended by me. This latter solution certainly relieves pain more successfully than lactic acid, but regarding their relative effect on tubercular tissue there is little choice. The granulation tissue which appears on ulcerating surfaces during the process of repair has to be protected and stimulated in the most careful manner. I know of nothing more useful in this purpose than nitrate of silver in weak solutions.

Pain is an important consideration and varies from a slight degree on swallowing to a continuous and intense suffering. Warm inhalation of menthol and iodoform are sufficient for the slight cases, but cocain, orthoform and creosote are necessary for those of greater severity. When the general soreness and aching of the larynx is not relieved by the remedies mentioned, application of cold should be used. This may be done by menthol, camphor and chloral hydrate in equal proportions, externally applied, or by the ice coil, bag or pack. In some cases we have to resort to internal medication to assist us in the relief of pain. The elixir of paraldehyde may be sufficient, but usually morphin or codein in some form is necessary.

SURGICAL MEASURES.

Any surgical treatment must be restricted to selected cases and for experienced operators. In my practice and also in that of my fellow workers I have seen considerable harm result from the indiscriminate use of the curette. A recent case greatly impressed this on me.

A Japanese with a tubercular infection involving the arytenoids and epiglottis consulted me, and, after learning the nature of his trouble, expressed a determination to return to his native country. The obstruction to respiration was so great that something had to be done immediately to relieve the dyspnea, and I used the curette, removing a quantity of thickened tissue. Within thirty-six hours the lateral pharyngeal mucous membrane puffed up and presented the characteristic swollen or grey edematous appearance of a tubercular invasion. Twenty-four hours later this spread to the left palate and lymphoid tissue at the base of the tongue.

If time permitted I could quote many similar instances. I now employ the curette only in the following conditions: To relieve dyspnea and dysphagia in advanced cases; to remove tumefied tissue and for scraping ulcers during a quiescent period. In the latter cases my plan differs slightly from that usually recommended. After cleansing and cocainizing the surface I use a dull curette to remove all the necrotic tissue, taking care not to cause any bleeding. After this has been done and the pearly grey floor of the ulcer thoroughly exposed, I apply such remedies as the necessity of the case indicates.

CLIMATIC TREATMENT.

I would rather take my chance with a good climate without special medical treatment than the best of treatment in a poor climate. Just what is the best climate is not easily decided. Residence near the sea or any large body of inland water or in large cities is a bad place for tubercular throats. In the early stages before ulceration or during the quiescent stage of ulceration a dry and cold atmosphere is beneficial. If the process in the larynx is in a stage of activity a moderate temperature is important. High winds, especially east and north, and damp foggy days are bad for all ulcerations, especially the active cases. As a rule all tubercular throats are better in a moderately warm, dry climate, free from dust and winds. I have seen a number of throat infections entirely arrested by climatic measures alone, but, of course, the permanency of any arrest must remain an open question. In my opinion the future of all arrested cases, either laryngeal or pulmonary, depends on an early diagnosis and the patient's financial ability and willingness to keep himself under climatic and hygienic surroundings suitable for his highest state of existence.

7 East Fifty-fifth Street.

DISCUSSION.

DR. EMIL MAYER, New York City—The importance of the early recognition of tuberculosis is a subject that is as near to us as any one subject that I know of. It comes to us in so many different ways. In a case that came under my observation the young man had a bad tubercular history, his father, mother, one brother and sister having died of tuberculosis, and the young man came to me feeling that he was going to have tuberculosis.

There was nothing to be seen in the pharynx, and yet he had attacks of laryngeal spasm. For my benefit he succeeded in having an attack in my office, and it was an alarming one. He had a slight deposit of lymph in the nose, which was examined carefully, but no tubercle bacilli were found. He was examined by one of our best medical men, but no evidence of any pulmonary trouble was found, and the diagnosis of no tuberculosis was made. With the exception of a short cough, these were the only symptoms he had. He was advised to go abroad for the benefit of his health. In three weeks time he went abroad, and an examination of his nose then showed tubercle bacilli. We have all of us seen interarytenoid thickening, which usually speaks for tuberculosis that will supervene in a comparatively short time. Shortly before coming here I saw a young man who appeared before me two years ago with an interarytenoid thickening which is still present, but I believe tuberculosis will eventually appear in those cases. One thing I would like to speak of is the use of cocain for the relief of pain. I believe, with the preparation of orthoform in powder, we can almost invariably stop the pain without cocain, and I am more impressed by that in that I have seen, within a fortnight, a woman in the last stages of tuberculosis who was advised to use cocain and got rest from its use. She gets only temporary relief, but she has developed now the cocain habit. I make that as a suggestion, and I think Dr. Chappell will agree with me that if we have other methods just as efficient and can avoid these drugs that will make the patients still more unhappy, it is an important consideration.

DR. CLEMENT THEISEN, Albany, N. Y.—I do not know whether the Doctor spoke of the rare form of hypertrophic tuberculosis sometimes seen. I will briefly report a case that I saw about a year ago. A gentleman walked into my office one day, and the first thing that impressed me was his curious husky voice. I think the aphonia of laryngeal tuberculosis is different from the aphonia of anything else. He seemed to be otherwise in perfect health. Examination of the lungs was negative. On laryngoscopic examination I found absolutely nothing to indicate laryngeal tuberculosis. There was only a diffuse thickening over the cords and ventricular bands. I made a very careful examination of the larynx, and several examinations of the sputum were made, but nothing was found. I told him, however, that I was strongly inclined to think that he had laryngeal tuberculosis and that I thought his only chance was to go west. He started west, but for some reason returned to New York and was seen by a number of well-known laryngologists, who made different diagnoses. The case was reported by one gentleman as a case of diffuse pachydermia laryngis. Six or seven examinations of the sputum were made, which were negative, and nothing, I believe, was found in the lungs. In the Adirondacks he was seen by Dr. Trudeau, tubercle bacilli were found in the sputum, and he died about six weeks after going to

the woods. I believe it was a case of primary hypertrophic tuberculosis.

I used to curette my cases of tuberculosis when not too far advanced, but I have given that up, for I believe it is of service only in the earliest cases, when the tuberculous process first starts. When we remember that the tuberculosis begins in the deep tissues first and is, as a rule, secondary to pulmonary involvement, we can see that curettage is of doubtful value, for we can never be sure that we have removed all the tuberculous tissue. I agree with Dr. Mayer in regard to orthoform. I believe it will relieve the pain. I use it in the form of Frazer's tablets. I think the effect is much more lasting than from cocain, and there is no danger of acquiring a dangerous habit, although this danger need not be considered in the advanced cases.

DR. F. J. QUINLAN, New York City—The title of the paper is "The Early Appearance, Diagnosis and Treatment of Tuberculosis of the Upper Air Tract." It seems to me the Doctor has given us especially the treatment of the more advanced stages, when there is tumefaction and breaking down of tissue. I know nothing more perplexing than the early appearance of pharyngeal or buccal tuberculosis. If one were to be guided by the appearance without the subjective symptoms, I think he would narrow himself down to a small and limited field of symptoms. We should not be satisfied with the local appearance alone. When we have only a small degree of infiltration about the superficial structures, with hardly any evidence but a suggestive cough and slight huskiness as well as a little pain from time to time in deglutition, we are not justified in making a diagnosis without entertaining the range of subjective symptoms as well. I have never seen a case in which I felt satisfied as to early diagnosis, and I think we are handicapped without the consideration of these other subjective symptoms. I have known case after case in which there were no bacilli reported in the sputum and yet there was a tuberculosis. I think the pulse, temperature and respiration must always be a valuable adjunct to our means of diagnosis, as well as the repeated examination of the sputum. I am very much pleased that Dr. Chappell has given so much thought to this subject, but I hoped that he would emphasize more suggestive points as to the earlier appearances.

DR. GEORGE C. STOUT, Philadelphia—There were three features in the paper which especially appealed to me: First, the more favorable prognosis we may now give these cases, as compared with that of a few years ago, and this is more often true of course in the early stages. The second point is as to the relative importance of climate and local treatment; and the third is as to the use or disuse of instruments in ulcerative tubercular laryngitis.

In regard to prognosis, I would like to record a case seen three years ago. A woman, apparently about 30 years of age, presented herself at my office, having suffered with a severe cough for some months past, with emaciation, rise of temperature and the general symptoms of tuberculosis. The laryngeal appearance showed marked swelling of the left arytenoid region, there was a small interarytenoid ulceration, and tubercle bacilli were found in abundance in the sputum. A careful examination of the chest eliminated lung symptoms. So, also, as far as possible, tuberculosis in any of the other organs was eliminated. She grew steadily worse for a while, and at one time the dyspnea was so bad that it was thought tracheotomy would be necessary, but after a few months of local treatment (asepsis and lactic acid principally) the whole condition cleared up, the tubercle bacilli disappeared from the sputum, and the woman is to-day apparently perfectly well, and she has no signs of tuberculosis in any organ. Would not even the few cases—such as the above—which we all meet warrant us in giving a favorable prognosis in a certain percentage of these early cases of tubercular laryngitis?

As to climate, if in the homes we will enforce the same rules that are enforced in the Adirondacks and the other resorts, it seems to me we can get much the same results. I think probably most of us in the large cities have had patients under observation whom we could not send away, but who, by persisting in keeping in the open air and taking exercise, have often recovered. I have in mind at least two such cases which have practically recovered. As to the Adirondacks, while they are an admirable place of rustication for any of us, my experience with cases of tubercular laryngitis has been unfortunate in that locality, for only one case of the five or six which I have sent there has shown improvement.

As to operative interference, experience would seem to argue against curetting or otherwise roughly handling the inflamed larynges. The less said about the curette the better. I have never had any favorable results in my work from operative interference in any case.

DR. W. S. ANDERSON, Detroit—There is only one point which I wish to make in regard to the treatment, and that is the use of intratracheal injections. While not a new method, I think it is not appreciated by the profession generally. The intratracheal injection of one or two drams will give relief in many cases when no other method will, and it does not interfere in any way with the use of other means. I use a syringe with a curved canula, which is introduced between the vocal cords. I use olive oil as a vehicle and dissolve in it 5 per cent. of camphor-menthol and 2 per cent. of guaiacol; 2 per cent. of iodoform may be used in olive oil. The relief in most instances is very marked, and it does not cause spasm or irritation except in a very few cases. If more generally used, I am sure the profession would get gratifying results from this method.

DR. T. W. CORWIN, Newark, N. J.—I have used, for about two years, tracheal injections of about the same character mentioned by the last speaker and in a great many cases they have given satisfactory results.

DR. CHARLES H. BAKER, Bay City, Mich.—Dr. Chappell referred to laryngeal cases being worse near large bodies of water. I would like to ask whether his observation is that laryngeal tuberculosis occurs more frequently in those sections than in other parts of the country. I practice near the Great Lakes, and I see few cases of laryngeal tuberculosis compared with general tuberculosis. As to local treatment, the Doctor did not mention one thing that I have found to give great relief. When tumefaction occurs before ulceration and when there is great distress, ichthyol in emulsion or oily solution or a watery solution—it makes little difference in what form it is applied—gives relief and seems to have an immediate ameliorating effect on the tubercular condition, causing often marked improvement without the use of any other local treatment. Of course, the usual constitutional treatment is given in addition.

DR. SARGENT F. SNOW, Syracuse, N. Y.—In the treatment of these tuberculous conditions I have always found the lactic acid applications to be very satisfactory. But as my experience has gone on I find myself relying less and less on local treatment. In the past six or eight years it has been my fortune to have a number of cases that I have sent to the Adirondacks and Catskills. Sometimes the ulceration was so extensive that the voice was completely lost, and I could see no chance for good results, but if I sent such a patient to the mountains and kept him there winter and summer, the local problem was solved. I have had a case under observation for nine years in which there was an ulceration so extensive that it seemed impossible to have the voice restored. She is now teaching singing, in connection with her school work. This patient has been in the Adirondacks all the time, except, perhaps, two weeks at home in the summer. She has taught school continuously, and she has now two very good vocal cords.

It seems to me that the real question is as to whether there are tuberculous conditions in the other air passages; are they patients whose general condition is satisfactory? If the general tuberculosis is well in the second stage or further, we can do but little good. If they are in the primary or the early part of the second stage, a practically continuous residence in the Adirondacks solves the problem. Local treatment is to be commended for those who are compelled to remain at home.

DR. B. A. RANDALL, Philadelphia—The question of early diagnosis is important. In otologic work one is loath to strip

and examine a patient, and yet the appearance of the ears and upper air passages often directs our attention to tuberculosis. The altered rhythm of respiration may make the case so plain that it will not be necessary to strip the patient. It seems to me that this is too important an indication to be ignored, for before there is moist crackling or other changes in the pulmonary sounds at the apices, this prolonging of the expiratory sound may be readily determined.

DR. WALTER F. CHAPPELL, New York City—I only advocate cocain in advanced cases, when orthoform and other remedies have failed. Orthoform is very good in some cases, but it fails at times. Dr. Baker asked about the frequency of tuberculosis of the larynx in the regions near large bodies of fresh water. I do not know that laryngeal tuberculosis is more frequent near large lakes, but the cases do badly there and at the seashore.

A CASE OF SARCOMA OF THE MAXILLARY SINUS, EXCISION OF THE UPPER JAW, WITH REMARKS.*

JOSEPH S. GIBB, M.D.
Professor of Laryngology and Rhinology, Philadelphia Polyclinic.
PHILADELPHIA.

In the preparation of a paper on malignant diseases of the nose and accessory sinuses read at the last annual meeting of the New York State Medical Association, occasion was given to search the literature of the subject. Among the many points of interest I was impressed with the unusual lack of literature on the subject of sarcoma of the accessory sinuses. So far as I was able to ascertain there are but four cases of sarcoma reported. Of these three cases were of the maxillary sinus and one of the frontal and ethmoid cells. This, of course, does not represent the frequency of sarcoma in this locality. We are all more or less familiar with these cases, either from personal experience or report.

It shows, however, a lack of appreciation of the importance of the subject, for our knowledge of rare and peculiar cases is increased by the publication of similar cases in which the individual methods of observation and treatment are outlined. With these thoughts in mind, and for the reason that the subject is of deep interest to me, I have considered the following case not unworthy of report:

NARRATION OF THE CASE.

F. O., male, aged 63, previous health good, family history unimportant. Early in October, 1901, he noticed a swelling below the left eye and suffered somewhat from irritation of the lids. For the relief of this condition he came to the eye department of the Episcopal Hospital. Soon after his first visit he became conscious of an irritating discharge from the left nostril and breathing from this side became obstructed. He was then referred to the nose and throat department where I saw him for the first time about October 15.

Examination.—There was tumefaction over the left cheek bone and puffiness of the left lower lid. An irritating discharge from the left naris excoriated the upper lip immediately below the entrance to the naris and he experienced much difficulty in breathing through this nostril. Examination revealed a mass occupying the left nasal cavity. This mass was reddish in color and rather soft; it bled upon the slightest touch. The growth filled the naris so that all the anatomic points were obscured.

Suspecting the nature of the growth a piece was snared off for microscopic examination. Free bleeding followed this slight operation. Suspicion pointed to the antrum as the source of the growth because of the accompanying swelling of the cheek and eye. Transillumination of the sinus gave distinct evidence of the presence of a body within the antrum.

Operation.—The nature of his case was pointed out to the patient and he was advised to have an excision of the upper jaw. He readily consented and was accordingly admitted to the hospital for this purpose. Some delay in the time of operation ensued because of the illness of the surgeon to whom the case belonged, so that a week or more elapsed. In this brief period the growth increased with amazing rapidity and the general symptoms became alarming. The growth absorbed the anterior wall of the antrum, appearing on the cheek, the skin over which became tense and red and palpitation elicited distinct fluctuation, and gave every evidence of the presence of a purulent collection. The growth also absorbed the hard palate and fluctuation was distinct in the roof of the mouth. He became septic and delirious, requiring restraint, and it was feared extension had taken place to the cerebral cavity. However, December 7, though his condition was not favorable for operation, he was prepared for the same and Dr. Hutchinson removed a portion of the superior maxilla and a large quantity of a semi-solid, sarcomatous-looking mass, pus and broken-down tissue from the antrum. The wound was thoroughly cleansed and every suspicious-looking mass curetted away. The wound was then packed with iodoform gauze.

Recurrence and Reoperation.—He reacted well from the operation, and by the 16th the wound seemed clean and healthy.

December 24 (17 days from the date of the operation) a small nodule was noticed on the posterior wall of the antrum. This continued to grow rapidly and by the middle of February filled the entire cavity and projected into the mouth. Ligation of the external carotid artery of the left side and complete excision of the superior maxilla, including the floor of the orbit and excision of all enlarged glands, were now advised. In consultation with Dr. Davis we agreed that this offered the most favorable chance for the patient and that should recurrence take place the carotid of the right side could be ligated. Accordingly on the first of March Dr. Davis first tied the external carotid artery and removed a few enlarged lymphatic glands in the neck. He then made a complete excision of the superior maxilla. The patient reacted well from the operation and has since continued to do well, showing no evidences of recurrence at the present time.*

The piece of growth snared from the nose was submitted to two competent pathologists and pronounced giant-celled sarcoma. Later a piece of growth in the antrum was examined by another pathologist who designated it a mixed round and spindle-cell sarcoma.

The interest in this case centers (1) in the location of the sarcoma, (2) the rapidity of its growth, (3) the means of diagnosis, and (4) the treatment.

LOCATION.

That the maxillary sinus is an unusual site for the development of malignant growths is attested by the few cases which have been reported. That it is not so infrequent as the statistics would lead us to believe I am convinced from my own experience and that of professional friends with whom I have discussed the subject. Several cases have come to my notice, though not directly under my control, where it seemed probable the starting point was the maxillary sinus. There can be no doubt in the case reported that the maxillary sinus was the original site.

THE RAPIDITY OF GROWTH.

Sarcoma of the nares is slow of progress as compared with other malignant diseases affecting this region. From a careful analysis of 111 cases it was found the average duration extended over a period two and a half to three years and that the growth was rather slow in extending.

There is very little data on which to base conclusions in the similar condition affecting primarily the maxil-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

* The patient died in the early summer. He was suddenly seized with acute maniacal delirium and died before he could be removed to the hospital. No autopsy was obtained. It is probable the symptoms were due to an extension of the sarcomatous process to the meninges.

lary sinus. Levy's case extended over a period of three years. In Lamphear's case no mention is made of the duration of the growth and there was no recurrence in eight years after a radical operation. Such rapidity of growth as was seen in the case herein reported must be quite unusual. Observe that in six weeks from the time of the first manifestations of the disease the entire antrum and a large portion of the left nasal chamber is filled with the new growth. Degeneration and liquefaction of the growth had taken place and the osseous tissues were involved through pressure and absorption. Again, after the first operation, which was not a complete excision of the superior maxilla, recurrence was noticed in seventeen days, and in four weeks' time the entire cavity was filled and the growth projected into the mouth. Rapidity of growth is not entirely unique in sarcoma in this locality, for several cases are reported in Bosworth's statistics of nasal sarcoma in which the progress of the disease covers a period of a few months. It is, however, not the usual course.

THE MEANS OF DIAGNOSIS.

The presence of nasal discharge with a growth in the nasal chambers and concurrent swelling of the same side pointed to disease of the sinus and justified the removal of the nasal tumor for microscopic examination. Transillumination rendered invaluable aid in showing the antrum occupied by some foreign body. The natural inference was that this foreign body was of the same nature which the microscope showed the nasal growth to be, and the latter was a mere extension of the former.

METHODS OF TREATMENT.

The history of this case demonstrates, if further proof is necessary, the utter futility of any operation in malignant diseases of the nose and accessory cavities which does not include the entire removal of the growth. It were better not to interfere by surgical measures than do an incomplete operation. Nasal sarcoma is stimulated to increased activity by intranasal operations because such are necessarily incomplete—one can never be sure how much is involved out of the line of vision. Observe in the case reported the very rapid recurrence after an incomplete excision of the superior maxilla. It seemed at the time of this operation that all malignant tissue was removed, but in the light of subsequent events it would have been much better to have removed the entire upper jaw—which, at the same time, would have removed possibly infected osseous tissue and afforded increased amount of space for thorough inspection of the parts.

Ligation of the carotid, by starving the tissues, plays an important part in the treatment of sarcoma in the nose and accessory cavities. In the case reported it has doubtless contributed to the prevention of recurrence and it facilitated the operation by minimizing the hemorrhage. In this connection the work of Dr. Dawbarn of New York City should be mentioned. He advocates the ligation of both external carotids in the treatment of malignant growth in the nose and accessory cavities. As I have not had access to Dr. Dawbarn's article I am not familiar with his technic. In a conversation with him I gathered that his operation consisted in ligation and removal of both external carotids and their branches and that no attempt is made to remove the growth; the removal of the blood supply being thought sufficient to effect shriveling and render it inert.

It is, of course, too early to claim a cure in the case reported, but it seemed to me of sufficient importance to warrant the publication at this time.

1907 Chestnut Street.

DISCUSSION.

DR. PETER J. GIBBONS, Syracuse, N. Y.—Just now we might resort to the use of the *x*-ray in such a case, which is used, although at the present time it is more or less experimental.

DR. G. V. WOOLEN, Indianapolis—We have had an experience in Indianapolis to which it might be interesting to call attention. A case came to Dr. Sterne with an immense sarcoma affecting the axilla, neck and the groins. There was great asphyxia. At that time the Doctor was investigating the use of the *x*-rays, especially in connection with the treatment of malignant growths. He selected the upper growths in this case, the neck and axilla, for treatment and left the groins. He succeeded in breaking down the growths entirely, whereas those of the groins continued to increase. He lost his patient, he claims, through the liberation of large quantities of toxic material, which caused death from toxemia. His conclusion, in a premature way, as he stated when he brought it before our society, was that it would probably be undesirable to use the *x*-rays in internal work.

THE PROPHYLAXIS OF SINUS DISEASES.*

D. BRYSON DELAVAN, M.D.
PROFESSOR OF LARYNGOLOGY, NEW YORK POLYCLINIC, ETC.
NEW YORK CITY.

There can be no question that of late years diseases of the sinuses adjacent to the nose have been distressingly common. Case after case appeals to us for aid, all of the different sets of cavities show liability to involvement, and the processes of inflammation and suppuration are represented in a wide range of their typical manifestations. If the ultimate consequences of sinus disease were trivial and its natural course one which led to speedy recovery we might perhaps be pardoned for regarding it optimistically and for leaving its care to the healing forces of Nature. Unfortunately, however, there is no class of disorders which calls more urgently for relief, nor which if neglected creates more widespread and disastrous ruin. The extensive and irreparable destruction of important parts, suffering of unparalleled severity, long-continued invalidism and nervous depression—these and many other evils may easily result from the diseases in question.

In recalling these well-known facts it must be remembered that much brilliant work has been done for the cure of many of the most severe and difficult cases, and that patients who formerly dragged out existences of extreme and hopeless suffering, are to-day enabled to secure permanent relief. The operative treatment of chronic sinus disease is one of the chief triumphs of modern surgery, and as such is deserving of highest praise.

But while the cure of disease is an unspeakable benefit to mankind, its effective prevention is a far greater one. It is well, therefore, that we should give careful attention to the subject of this discussion, in the hope that through a better understanding of the causes of sinus disease some suggestions may arise through the aid of which a certain number of cases may be altogether eliminated, and others, destined by reason of neglect to fall into serious trouble, may be quickly rescued. The writer believes that a large amount of sinus disease could be done away with if the knowledge of the general physician were sufficient to recognize its predisposing causes, or, where it has already developed, to appreciate its early acute symptoms and to apply a few simple principles of cure.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

All who have observed the course of acute sinus inflammation know that in many cases severe symptoms may be successfully met and a speedy cure effected by the prompt recognition of the trouble and its immediate effective treatment.

It may not be so generally understood that in many instances certain causes exist which directly predispose to sinus disease; causes in the presence of which exciting influences of comparatively little importance in a normal nose may assume dangerous proportions and become the occasion of serious results. It has seemed desirable, therefore, to present a few suggestions bearing on this subject.

In order to prevent these troubles it is necessary to know the various causes which may bring them about. These may be both predisposing and exciting.

PREDISPOSING CAUSES.

Anything which seriously hinders free drainage from the upper half of the nasal cavity may act as a predisposing cause of sinus disease. Malformations of this region are by no means always associated with diseases of the accessory sinuses, as we occasionally find the latter seriously affected in particularly well-formed and patent nasal cavities. On the other hand, malformations of the nasal cavities predispose to congestive troubles in general, and those in turn render the accessory sinuses more liable to accident. When acute inflammation of the sinuses has been actually established, there is no question that the above-mentioned conditions may contribute in an important degree to the severity and continuance of the attack; thus, an acute inflammation of the sinuses, which in a normal nose would have run a short course and terminated in spontaneous recovery, may easily become so aggravated by the lack of free drainage and by the increase of the inflammatory symptoms, due to pressure as well as to retained secretion, that the case may resist all efforts at cure, and in spite of the most skilful treatment become chronic. Where, in addition to deflection of the septum and deformity of the middle turbinates, the transverse diameter of the nasal cavities is especially narrow, invasion of the sinuses is particularly apt to be followed by serious results. Several abnormalities of the septum may be mentioned as contributing to the production of sinus disease. One of the most important of these is fracture of the septum with displacement, the narrowing occurring somewhere in the neighborhood of the middle turbinated body. Deflection of the septum without evidence of previous injury, by which one nasal passage becomes distinctly narrower than normal, may also be mentioned.

Catarrhal thickening of the tissues of the upper and middle part of the septum may be another cause, as may also be hypertrophy or unusual size of the so-called tubercle of the septum, that area of erectile tissue situated about the middle of the septum and opposite the middle turbinated body.

Again, the conformation and condition of the middle turbinated body itself are very important factors in the production of these diseases; thus, in case the middle turbinate is of abnormal shape, whether longer than usual in its perpendicular diameter or curved on itself, or again, where it is distended to the immense size sometimes found on the concave side of an extensively deflected septum, it will readily be seen that the normal drainage of the parts may be interfered with and obstruction easily created.

Congestive and hypertrophic conditions of the soft parts of the middle turbinates which interfere with drainage are another predisposing cause.

As to the general causes which may predispose to these diseases, it may be said that anything which promotes acute or chronic irritation of the nasal cavities or anything which tends to create catarrhal disorders would act as a predisposing cause of sinus inflammation.

EXCITING CAUSES.

The exciting causes of sinus disease are varied and cover a pretty wide field. Thus, inflammation of them may occur in several acute affections, among others: pneumonia, diphtheria, measles, scarlet fever, typhoid fever, smallpox and cerebrospinal meningitis. It is not an uncommon complication in croupous pneumonia. The frequency with which it has been observed during attacks of influenza is a matter now commonly known and recognized. The inflammation may extend directly to the sinus from the nose or nasopharynx or indirectly in the course of a general systemic infection. Sinus disease has also been attributed to an attack of facial erysipelas. It is questionable, however, whether erysipelas may not in many cases be due to pre-existing sinus disease, numerous instances of recurrent facial erysipelas having been observed in which the erysipelatous attacks have been done away with by the treatment and cure of necrosing ethmoiditis and similar diseased conditions of the accessory sinuses. Suppuration of the sinuses may also be associated with certain chronic diseases of the nose, such as specific ulceration, tuberculous disease and the various types of new growths, both benign and malignant. While nasal polyps may be a cause of the sinus disease through their influence in occluding the channels of exit of these cavities, it is generally conceded that they are far more apt to be the result of irritation due to a sinus discharge, and it is not likely that they can be eradicated until the latter has been cured.

It has long been known that certain cases of suppuration of the antrum of Highmore have been due to dental irritation. Inflammation may also be due to injury from fracture of the walls of the sinus. It has not infrequently been caused by operations on the nasal cavities in which the adjacent parts have been treated with violence, or instruments not properly aseptic have infected the parts. It has occurred from the removal of nasal polyps, through plugging the nasal cavities for epistaxis or for other reasons, and, in general, after any operations performed in the neighborhood of the middle turbinated body.

Attention has also been called to the fact that the extraction of teeth and division of the fifth cranial nerve have caused inflammation of the antrum. The peculiarly close relation between the channels of exit of the different sinuses renders infection of one from another a frequent accident, as has been well shown by Bryan and other authors.

Doubtless another prolific cause of irritation is the inhalation of dust blown up from the badly-cared-for streets of large cities and filled with countless possibilities of infection. It would seem, also, that the popular use of the racing automobile should contribute a large addition to the list of cases, as here the conditions contributing to their production are particularly numerous and favorable.

Again, in many cases of sinus disease the careful bacteriological study of the secretions has demonstrated the presence of various different micro-organisms; among these are the *Diplococcus pneumoniæ*, the *Pneumobacillus of Friedlander*, the *Bacterium coli communis*, and others. More commonly, however, varieties of the streptococcus and staphylococcus are found.

PROPHYLAXIS.

Of all the possible causes of these diseases, however, probably none is more common than local inflammation resulting from influenza. Just here the services of the physician may be invaluable. If he will recognize the importance of the severe coryza which accompanies this and allied disorders, do his utmost from the moment of its inception to prevent it, or at least to shorten its course, we can safely promise that the number of cases applying to the specialist for the relief of chronic sinus disease will be reduced to a small fraction of what is now the case. Care properly exercised towards the much despised "cold in the head" would save a vast amount of serious after-trouble.

A study of the predisposing causes of sinus disease at once suggests several important practical points; thus, any condition which occludes the natural outlets of the sinuses directly tends to the production of disease. It is very important, therefore, in fractures of the nose and in malformations of the septum and of the turbinates that this important consideration be kept in mind. The correction of a disfigurement and the opening of the nasal cavities for the free passage of air are not by any means the only considerations which should be entertained in the study of these cases. Even where external deformity may not be great and where the lower part of the nasal chambers is sufficiently unobstructed to admit of free respiration, the condition of the upper half of the cavity may be such as to demand earnest attention and perhaps careful operative treatment. This idea also applies to occlusion of the nasal cavities through swellings and hypertrophies of the soft tissues, many of which have a very direct influence in obstructing the sinus outlet. The practice recommended by some foreign authors of increasing the transverse diameter of a narrow nasal cavity by crushing the middle turbinated body against the outer wall of the nose is most unscientific, in that it directly favors occlusion of the sinus outlets.

ACTIVE TREATMENT.

There are probably few conditions in which more favorable results can be gained by prompt and efficient action early in the course of the disease than in acute sinus inflammation. The first symptoms of the invasion of the accessory cavities are not always easy to recognize. But while exceptional cases may often occur, as a rule the peculiar pain over the brow which accompanies frontal sinus involvement, the aching and neuralgia in the neighborhood of the cheek bone which attends the invasion of the antrum of Highmore, the peculiarly deep-seated, unusual sensations accompanying inflammation of the ethmoidal sinuses, are generally fairly evident. In any case, it is needless to say that violent inflammation of the nasal membranes themselves is likely to extend by contiguity to the linings of the adjacent sinuses, so that we may take for granted that in certain severe attacks of inflammatory intranasal disease the sinuses must almost of necessity be involved; or, if they have not yet become involved, that there is imminent danger of an extension of the difficulty to them. The pernicious practice of allowing a "cold in the head" to run its course is probably responsible for large numbers of chronic cases of sinus disease. In any case, however, an acute influenza—whatever may be its nature—should be watched as a matter of importance and should be treated from the very outset as a disease likely to produce grave results. Even if a given attack of acute influenza should not result in setting up long-continued sinus disease, the fact that one such inflammation predisposes the patient to others, which in turn, render him liable to sinus involvement, should urge us to use every possible measure for checking the more simple attacks.

The principles of treatment applicable in these cases are based on the most ordinary and well-understood rules of common sense and experience in the management of inflammatory conditions in general, and means are not lacking by which speedy and oftentimes brilliant results may be obtained. The administration of laxatives for the purpose of reducing the circulatory disturbance in the head, the internal exhibition of certain drugs, such as belladonna, for the purpose of contracting the blood vessels of the affected region, are both time-honored means for affording relief. Perhaps the most important recommendation of all is that the patient should be kept in an even temperature and that the surface of the body should be so stimulated as to favor the flow of blood in that direction; by this we mean that he should be put to bed and kept warm and comfortable during the height of the attack. Locally, the old-time methods have been supplemented by a number of new suggestions of extreme value. Here two principles of treatment are to be recognized; first, the fact that the disease is being kept up through the retention of irritating, if not absolutely poisonous, secretions, and, secondly, that on account of the swelling of the parts the natural avenues of escape are blocked and the already excessive amount of secretion is prevented perhaps absolutely from emptying itself. In this state of affairs success is attained by simply applying the grand axiomatic, surgical principle of free drainage and thorough cleansing of the parts. On this the treatment of these cases absolutely rests.

Just what remedies are the most reliable in the acute cases each careful observer must determine for himself. The writer has found much value in the following rules:

1. All local treatment applied in these cases must be absolutely unirritating.
2. The nasal cavities should first be carefully sprayed with a mild cleansing solution, following which the swollen tissues should be contracted by applications of a mild solution of cocain, not stronger than 4 per cent., and the approaches to the sinus outlets opened as widely as possible by the action of this drug.

The secretions should be removed as far as is possible from the regions before occluded by means of the cleansing spray; a spray of adrenalin should be applied for the purpose of increasing the power and adding to the duration of the effect of the cocain, and, finally, the parts should be protected by a light spray of liquid albolene. If these applications are made with sufficient gentleness and care the result will be immediate relief to the patient's distress with much ultimate benefit to the inflamed cells. Applied early in the history of the case, an attack which promised to be severe has been broken up by a single treatment. Several treatments, however, are generally necessary, many may be required, and sometimes it is only after a long course of patient effort that success is attained. Where the treatment must be continued the danger of the repeated use of cocain must be recognized and adrenalin substituted. Indeed, in many cases it is better to depend on the latter drug alone. During the height of the attack the recurrence of the nasal swelling may necessitate the repetition of the treatment several times a day.

The prevention of invasion of the sinuses in the acute infectious diseases already mentioned, is a matter not

always within the limits of our present knowledge. Thus, in diphtheria, measles and scarlet fever, attended as they are with violent local congestion of the nasal cavities, it is difficult to think of any safe means of treatment. In typhoid fever, smallpox and pneumonia, however, careful systematic cleansing of the nasal passages is most valuable for many reasons and is clearly indicated, not only for the prevention of otitis, but also for that of analogous inflammations of the accessory sinuses.

SUMMARY.

To briefly summarize the matter, in the prophylaxis of sinus disease much good may be accomplished:

1. By recognizing the conditions under which inflammation of the sinuses is likely to occur and, if possible, removing them.
2. Where removal of the predisposing conditions is not practicable, by guarding the patient against the various exciting causes which may determine an acute attack.
3. When acute inflammation is already threatened, by applying immediate treatment for its relief.

1 East Thirty-third Street.

ACUTE SINUSITIS.*

J. A. STUCKY, M.D.
LEXINGTON, KY.

On account of the irregularity in shape and uncertainty of size, location and communication of the accessory cavities of the nose, the diagnosis of the exact cavity or sinus involved in the acute stage of inflammation is frequently impossible. In the subacute or suppurative stage the diagnosis is not often difficult. Time will not be taken to refer in detail to these irregularities. The recent original research and publications made by Cryer of Philadelphia, B. Douglas of New York and Turner of London, have added greatly to our knowledge of the minute anatomy, and to them we are indebted for knowledge that enables us to deal radically and successfully with these pathologic conditions.

Attention is briefly called to the meati of the nasal cavities because the accessory sinuses communicate through them to the nasal chamber. These sinuses, or air chambers, both on anatomic and clinical grounds, are divided into two groups—anterior and posterior (Turner). The first group consists of the maxillary and frontal sinuses, and the anterior ethmoidal cells, all of which communicate with the middle meatus below the line of origin of the middle turbinate bone; the second, or posterior group, consisting of the posterior ethmoidal cells and sphenoidal sinus, open into the superior meatus, that is, above the level of the middle turbinate. These sinuses, or air chambers, are lined by a thin vascular mucoperiosteal layer covered by ciliated epithelium, studded with mucous glands, which is continuous through the ostium of each with the lining membrane of the nasal cavity.

The point made by B. Douglas regarding the sinuses of the small wings of the sphenoid should be especially borne in mind. He says: "These communicate, when they exist, on one side with the posterior ethmoid cell and on the other side with the recessus sphenoidalis. Above lies the brain, the optic nerve and the optic chiasm; below the nasal mucous membrane and the anterior part of the great sinus, and anteriorly the posterior ethmoid cell; externally, the optic nerve runs over the convex outer wall and when the sinus is large it may have here an important relation with the carotid artery and occasionally with the vidian nerve and wall of the orbit, so that an encysted empyema of this sinus may cause optic nerve paralysis, press on the carotid, paralyze the vidian or cause orbital pressure." A. Onodi has found in some cases there is direct communication between the maxillary sinus and the ethmoid or sphenoid cells, or both. The irregularities of the ethmoid and sphenoid are perhaps more marked than the others, but the irregularities are by no means limited to these, as all know who have operated on the frontal and maxillary sinuses.

ETIOLOGY.

As to the etiology of inflammation of the sinuses, obstruction of the natural outlet may be mentioned as the chief causative factor. Vascular dilatation associated with swelling or thickening of the mucous membrane, the formation of small masses of granulations, or even the presence of inspissated mucous may be the cause of the obstruction, and such closure leading to acute or chronic congestion, or even to inflammation and suppuration. Whether the retention of gases or the rarefaction of the air in the closed sinuses produces the congestion and pain as advocated by Vansant is yet an open question. Bacteriology throws little light on the source of the infection in sinusitis. The influenza bacillus is conceded by many to be the most prominent factor in the infection because of sinus inflammation being so frequently a sequel of la grippe. F. Furet has found not only the influenza bacillus, but also the pneumococcus, *Streptococcus albus,* and a large, long bacillus occurring in pairs and staining by Gram's method.

SYMPTOMS.

This trouble is usually ushered in with the general malaise attributed to grip, the severe "bone ache" being generally well marked. One of my patients has so accurately described the symptoms, and they harmonize so well with those of many others, that I give them almost verbatim: "Violent pain in brow and eyes, somewhat less in my cheek bones and back of head, all the front half of my head seemed alive with hot, throbbing pain. Every separate tooth was outlined with an individual ache. The muscles of my head and neck were stiff, the tissues over my eyes and forehead felt swollen and were tender to the touch. Light was painful and sharp noises were hard to endure, though I was partially deaf. I seemed to feel the noises in my body. One of the most distressing conditions was the stopping of all drainage in the nasal passages, and pain and discomfort were intensified by my efforts to clear these passages. The pain, sense of weight and fulness in my head was most acute in the morning. There was for some days the most intense and horrible tendency to mental depression (melancholia), that had to be continually fought against. An annoying and continuous nausea accompanied the pain in the head. The sense of taste and smell were so impaired that eating was a burden, though otherwise the appetite was good. Aside from the nausea there was really no distress outside of my head and neck. All these symptoms were intensified by any jarring of body, such as is caused by going down steps. Bending the head forward caused most acute suffering."

DIAGNOSIS.

The diagnosis of the exact sinus involved in the acute or inflamatory stage is impossible for reasons already

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

stated. Anterior rhinoscopic examination shows the mucous membrane red, swollen and of glazed appearance—frequently little or no secretion is noticed unless it be found inspissated in the middle meatus. The turbinals, both inferior and middle, are swollen. Posteriorly the same condition of dryness exists with less swelling of the turbinals.

Transillumination in the average case is practically of no value unless there be suppuration; then its diagnostic value is by no means reliable. Notwithstanding the violent pain in the head and the general discomfort of the patient, the pulse is usually slow and the temperature little above normal—frequently the morning temperature being from one-half to one and a half degrees subnormal. The skin is dry and parched. The symptoms simulate those of mild cerebral compression, and the severity of the subjective symptoms is out of all proportion to the temperature and pulse.

TREATMENT.

The indications for treatment are entirely antiphlogistic, the chief indications being, first, to relieve suffering and discomfort; second, to prevent suppuration.

The patient is to be put to bed, room to be kept quiet and all bright light excluded as long as eyes are sensitive. Arouse the secretions with full dose of calomel (5 to 10 grs.) combined with small quantity of ipecac, this to be followed in six or eight hours by saline cathartic—sodium salicylate and sodium bromid, 10 gr. of each, pilocarpin gr. 1/10 to 1/20 in four ounces of water every two or four hours till pain is relieved and free diaphoresis established. The activity of the skin is to be maintained by frequent bathing, great care being used not to chill the patient when giving the bath. Dry heat applied to frontal and occipital regions by use of hot-water bags. Locally, the nasal douche, used both anteriorly and posteriorly, of hot normal saline solution, or Seiler's solution in one-half strength, twice daily; this not only keeps the passages clean, but is very soothing and grateful to the sufferer.

If the nasal passages are occluded or uncomfortably "stuffy" a small quantity of the following sprayed into the nostrils every two or four hours is most effective and rapid in its action: Sodium chlorid 5 gr., resorcin 5 gr., adrenalin sol. (1 to 1000) 1 dr., aqua 7 dr.

This strength of adrenalin is all that is necessary, practically no reaction following its use. Cocain and opiates are mentioned only to be condemned, because of their unpleasant reaction and having a tendency to thwart the objects aimed at in the treatment. Only in exceptional cases have I found their use advantageous.

Special care should be given the systemic conditions, the secretory and excretory functions maintained in an active state. On account of the great susceptibility to recurrent attacks, convalescence should be guarded and the patient kept indoors until thoroughly restored.

Simple sinusitis, whether involving the ethmoid, frontal, maxillary or sphenoid, usually subsides spontaneously under appropriate antiphlogistic treatment. When suppuration occurs the imprisoned pus must be evacuated and thorough drainage maintained or serious results may follow.

Removal of the anterior end of the middle turbinate when it is so swollen as to occlude the natural outlet of the sinus is indicated in either inflamatory or suppuration trouble. In many cases this is the only surgical treatment needed.

DISCUSSION.

ON PAPERS BY DRS. DELAVAN AND STUCKY.

DR. C. M. COBB, Lynn, Mass.—There are certain diseases that we are not likely to escape some time in our life. Almost everyone has one or more of the acute infectious diseases. A very large proportion of the cases afflicted with the acute infectious diseases have some sinus disease. Then we have this complication that requires vigorous treatment, and not the treatment with douches, especially in the sinus complication that follows an actue infectious disease—that is, if you expect to escape trouble with the ears. The insufflation of calomel has done much good in my cases following the acute infectious diseases. There are sources of infection of the sinuses that we can escape, as in the cases due to dirt that you get into the nose either with water or by facing dust in the streets or halls, etc., which is intensely infectious. The pain in acute sinus disease is not a reliable indication as to which sinus is involved. As I will attempt to show to-morrow, in those cases I have transilluminated, the pain was not a sure indication as to which sinus was involved. One word in regard to the rarefication of the air in the sinus. It is claimed that after the closure of the natural opening the air is absorbed. We must remember that the composition of the air is practically 22 parts oxygen and 78 parts nitrogen. The oxygen is readily absorbed, but the nitrogen remains unabsorbed for months, especially in cavities, as in the pleural cavity or the sinuses. So practically 25 per cent. of the air may be absorbed, but that does not suffice to enable the cavity to soon be entirely filled with serum.

DR. EMIL MAYER, New York—In the first instance, to be purely technical, we should avoid the word sinusitis, as it is not correct. Secondly, regarding the treatment of these afflictions. We are accustomed to read that the antrum of Highmore is washed out through the natural openings. It is time that this statement be shown to be incorrect. By means of this section of a skull which Dr. Cryer kindly permits me to use, you will see that in order to enter the antrum of Highmore in a normal nose a probe must be bent like a shepherd's crook, and hence, if we do enter the cavity and inject fluid, it would have to flow up hill in order to be cleansed. In a small number of cases, if the opening is abnormally situated, cleansing in this manner is possible, otherwise not.

DR. D. A. KUYK, Richmond, Va.—Concerning the treatment of the mucous lining of the nasal passages and the adjoining sinuses, we should resort more than is now customary to internal therapeutics. In an experience of twelve years as a general practitioner before adopting my specialty, I met a great many acute inflammations of the nasal passages and the sinuses, especially the frontal sinuses. Now, if we administer pilocarpin, we do undoubtedly get an intense serous exudation, but at the expense of the tissues by reason of the increased arterial blood supply or active congestion, due to the vasomotor paralysis produced by the drug, causing swelling of the tissues rather than a shrinkage. The use of the calomel purge is of the greatest benefit.

If we want to produce diaphoresis, let us do so by giving a combination of liquor ammonia acetatis, spirits of niter and acetate of potash. From this we get thorough relaxation and diaphoresis without any prostration. After, say, six hours we can begin to give small doses of atropin sulphate, say, 1/500 grain every 15 minutes for six or eight doses, then once every 2 hours.

Atropin seems to have a selective action on the mucous lining of the nasal chambers and the accessory sinus. Under this treatment the supra-orbital and infra-orbital and nasal pressure pain quickly subside, the serous discharge diminishes, the head feels clear, and the prolonged acute inflammation of the nostrils and sinuses is averted.

DR. B. A. RANDALL, Philadelphia—I agree with what has been said in reference to the value of atropin in treatment. I have suffered frequently with a sharp inflammation of the antrum of Highmore, with an outpouring of a straw-colored fluid, and in such cases I have found mysèlf promptly and greatly relieved by the employment of atropin. I always employ it in the acute cases. As to Dr. Stucky's paper, I would

like to speak warmly in favor of transillumination in a very considerable number of cases. It is not infallible. Instead of being a method given us by our European brethren, however, it was demonstrated fully by a Philadelphia man years before the publication of it by Heryng. Dr. Addinell Hewson demonstrated it in 1885 in the general assembly room of the Pennsylvania State Medical Society. It seems to me the transillumination method is one of considerable value and I have very keen recollection of one case of sarcoma of the antrum of Highmore, in which the transillumination showed some clouding months before the opening of the antrum when probing, even then failed to demonstrate the presence of a sarcoma as later demonstrated. If we use the method in complete darkness with an electric light pushed to the verge of destruction, as is needful to secure sufficient intensity of illumination, and seek to illumine the pupils, we will often find it of very great value in diagnosis, for it often gives positive or negative information that may be relied on.

I have been struck by some statements as to the inaccessibility of the sphenoid by the probe in the ordinary examination. I have passed my probe into the sphenoid sinus in more than half the cases in which I have attempted to do so, and in some cases of extreme trouble this is of very great importance. In a case in which I was called to a child apparently near death from meningitis, I examined the eye-ground, the ear and the nose. In the nose I found one chamber free and the other with a little pus in it, which I removed. Then I passed my probe into the free sphenoid and found nothing there. In the other sphenoid I found pus, and I passed my little alligator forceps into the sphenoid, opened them and withdrew them with rotary traction, thus breaking away the front wall and giving free drainage. I got a demonstration of the presence of pus in the sphenoid in that case and permitted it to drain away, although too late to prevent the fatal result of the meningitis.

DR. GEORGE F. KEIPER, Lafayette, Ind.—I have tried to relieve the pain in various ways and have succeeded sometimes by the use of quinin. I believe in giving quinin and calomel together until the patient has taken three or four grains of calomel and the bowels have moved thoroughly. For the application of heat I know nothing better than a little Japanese pocket heating stove. It is better than the hot water bottle, because the hot water bottle needs to be more or less continuously changed to keep it at an even temperature. The Japanese heating stove may be wrapped, and in this way you secure more even heat continuously. But no one remedy will suffice in all cases, for every patient is a law unto himself. Many remedies may have to be tried before we secure a desirable result.

DR. SARGENT F. SNOW, Syracuse, N. Y.—In this subject of sinus trouble, that has been so well elucidated, I think we have a field that gives nose and throat men an opportunity to do the most beneficial work, work that will bring them the most credit, or about as much as any we can do. This is true not only in acute but also in chronic cases. In 1889 I prepared a paper on cephalagra and tic douloureux, which was presented before the American Rhinological and Otological Society. In that paper I cited cases, showing the source of tic douloureux to be frequently in the accessory sinuses, not always a pustular collection, but often caused by pressure by polypoid masses accumulating in the cavities. I have had a series of these cases since that paper was written that has impressed me more and more with the importance of that factor in causing those painful neuralgias. We have also the most severe forms of headache coming from these sinus accumulations. In my personal observation I have seen two cases so extreme that when the patient had the seizures there would occur a condition of spasm, with loss of consciousness. They were cured by clearing out the sinuses. I had one case of tic douloureux that resisted everything until I drained the sphenoidal sinus. This patient was under observation for two years without effecting a cure until I obtained relief for her in that way. In cases showing asthmatic symptoms, we can almost always determine a sinus trouble. I feel great confidence in undertaking those cases, because if we drain the sinuses properly we are almost sure to get definite results, although not always absolute cures. I want to take issue with Dr. Mayer in reference to one statement he makes, as to the possibility of syringing the antrum and cleaning it out. While I do not advocate this as a cure for chronic cases, still I have found it effective in subacute and acute cases. I have now two chronic cases with pus in the antral cavity that will not submit to operation, where I syringe out the antrum whenever the accumulation becomes too great. I agree with Dr. Mayer that it is impossible to syringe out some cases, but I do know I often find cases in which I can reach and syringe the antrum thoroughly.

DR. H. M. CRYER, Philadelphia—This is a subject which is very interesting to me, because I have often said that a probe or sound can not be passed through the nose into the antrum through the ostium maxillare of a normal subject. I have sections here from which slides were made and the pictures were shown on the screen at our meeting held at Columbus in 1899. This section is an anterior-posterior one, made by cutting down through the center of the orbit, the maxillary sinus and the molar teeth. We find two outlets to the antrum passing into the nasal chamber. The anterior one is the normal ostium maxillare. The posterior one is abnormal, sometimes called an accessory opening. These abnormal openings are often caused by the enlargement of the bulla ethmoidalis, which, in many cases, as it was in the specimen here shown, causes the closure of the hiatus semilunaris posterior to the normal outlet of the maxillary sinus, thus preventing the fluids from the maxillary sinus, the frontal sinus and the anterior ethmoidal cells from passing into the middle meatus of the nose; they all become engorged and the fluids will eventually pass in the direction of the least resistance. If the alveolar process had been thin, as it is in some cases, the fluid might have passed through it into the mouth, but in this case it is strong, and as the abnormal opening is posterior to the bulla ethmoidalis, the fluids pass into the posterior part of the middle meatus. Dr. Snow would have no trouble in syringing the antrum of this character, because the nozzle of the syringe could be passed through the abnormal opening. I have found the abnormal or accessory opening as large as the tip of my little finger, and those are the cases in which our friends wash out the antrum through a tube introduced through the nose. In the normal skull, as can be shown by perhaps twenty specimens here on the table, it would be impossible to pass a sound through the nose into the maxillary sinus.

DR. NORVAL H. PIERCE, Chicago—It is possible, I believe, in a certain number of cases to wash out the maxillary antrum through a natural opening—that is, without piercing the walls of the antrum. As has been said, the gentlemen who believe that they can syringe out the antrum through a pre-existing opening have struck cases in which there are no accessory openings. I would not be one who would impress you with some extraordinary skill, some wonderful tactile sense, but I have washed out the antrum through the natural openings. These openings have, in all probability, been accessory openings. But that does not make a difference in point of fact. There is very strong reason for believing that in diseased antra these accessory openings are larger and more numerous than in healthy skulls. Hartman, Zuckerkandl and a great many other men believe that this is true, that it is a part of a rarefying osteitis in which these accessory openings occur. Therefore, I believe we are justified in all cases of antral disease, whether they be acute or chronic, in first seeking for the natural opening into the maxillary antrum in the middle meatus before resorting to an external operation.

DR. ROBERT C. MYLES, New York City—Nearly all the literature is confined to the chronic cases. There is no doubt that what Dr. Delavan has said is true, that the condition of the nose is often the cause of the sinusitis. If that is true, we should remove the cause if possible. By overheating the houses, as we do in our modern civilization, we cause and intensify the conditions of acute sinusitis. We have also the progressive dentist as a cause of many cases, by filling the teeth that formerly were extracted. In my experience a hot

room with steam, the patient being kept in the dark and quiet, has aided the case in progressing favorably. In regard to the value of transillumination, the amount of evidence it conveys to one depends largely on how he may use it. One should take into consideration the darkness of the room and the intensity of the light. There should be a standard lamp. It is not infallible, but it helps us often to find out what is there. I do not believe that it is pus that causes much of the opacity, but that it is the thickened blood-filled tissues.

DR. G. MCAULIFFE, New York—Two points have appealed to me in acute sinusitis, and they are the persistent application of cold instead of heat and also the benefit derived from a good nose bleed. Nature induces a depletion later by the exudation of serum and pus. In regard to the choice between heat and cold, we know that cold is infinitely better where the bacterial potentiality outweighs the tissue degeneration. Where the tissue degeneration outweighs the invasion of bacteria, heat is better. I find the application of the ice bag diminishes the risk of further implication. I believe the advantages from anterior turbinectomy result not so much from the enlargement of the middle meatus as from the depletion of the hypermia in the middle meatus.

DR. GEORGE L. RICHARDS, Fall River, Mass.—I have had some experience in acute sinusitis, and I would like to endorse Dr. Stucky's remarks as to the value of syringing with warm saline solution in these cases. It certainly gives very great relief and washes out much of the mucus. In reference to the treatment of acute empyema of the frontal sinus, difficult as it is to pass a probe or canula up into it, I have several times relieved a patient who came to my office suffering greatly, by the passage of a probe up into the sinus. The relief was not due to the cocain which preceded the use of the probe, for there was no relief until the probe was passed into the frontal sinus.

DR. EDWARD PYNCHON, Chicago—Considerable has been said about the use of fluids in the washing out of the sinuses, and nothing has been said about the use of air, which will clean the nasal passages as well as water. The railroad companies use compressed air to clean the upholstering in the coaches, and I have put the same principle in practice in the treatment of the nose. With the hand nebulizer, when provided with a suitable tip, I think I have succeeded in driving medicated nebulæ into the sinuses just as well as I could a fluid. For acute sinusitis, the use of politzerization, with the external ears closed, so the air is forced to enter the sinuses, will often relieve the headache and sense of fulness. Of course intranasal deformities are most often responsible for sinus disease, and we might say that conditions of the nose that impair the ventilation of the attic are the causes thereof. When there is no impairment of the drainage and ventilation of the attic, there will be no sinus disease. One attack of sinus disease undoubtedly predisposes to a recurrence thereof. We should correct, as far as possible, the deformities of the nose which are instrumental in impairing the drainage and ventilation of the attic.

DR. L. C. CLINE, Indianapolis—I would like to endorse what the Doctor has said. I believe you can reach these cavities by nebulizing and stop the growth of these microbic agencies. Still, I do not believe we can wash out the cavities well with solutions. We can do something to stop the inflammation. I was struck especially, during the reading of the papers, by the fact that gentlemen will come to the meeting of this Association once a year from the Atlantic to the Pacific and from the Gulf to the Lakes and read papers on the prevention of disease, but did you ever hear of lawyers coming together and discussing how to prevent lawsuits? When a man gets hurt on the train or street car, some lawyer is immediately after him to try to induce him to bring suit. On the other hand, we are here to try to prevent disease.

DR. ALLEN DEVILBISS, Toledo, Ohio—In a case of acute sinusitis I would no more think of trying to wash it out than I would to wash out the gonococci in a case of urethritis. If you want to carry the infection back and produce a case of posterior urethritis, use a syringe. So it is in the cases of acute sinusitis; you will carry the germs farther on by trying to wash them out. If you have pent-up secretion, secure complete drainage and, as a rule, it will take care of itself.

DR. PETER J. GIBBONS, Syracuse, N. Y.—The principal cause of acute synovitis is a congested mucous membrane, whether it is from hay fever or any other disease. I wish to call special attention to the fact that the principal cause is exactly the opposite to what we get relief from. If you use suprarenal extract you get a contraction of the vasomotor system. The principal cause mentioned here is influenza. To talk of influenza and the various colds as being local diseases I believe is wrong. Influenza is a constitutional disease; it is no more a local disease than is syphilis a local disease in chancre. Influenza is caused by electrolytic dissociation of inorganic salts in the body into ions. Take sodium chlorid in the body, and any electrolytic dissociation that may affect it will give sodium positive and chlorin negative. Its effect is local on the mucous membrane or on the dilatation of the vasomotor system of that part. Chlorin mixes with hydrogen in the ethmoid sinuses without combining until the patient is exposed to light. The actinic rays cause them to unite and form hydrochloric acid. The ethmoid cells have something to do with chlorin, iodin, hydrogen and other ions and hydrochloric acid. We will find the causes of hay fever, hives, and kindred diseases in the ethmoid sinuses. They are the safety valves of the human body. The germ of influenza, then, is the same as the trout in the spring brook; the trout comes to the spring brook, not the brook to the trout. I believe inside of five years the medical profession will make a marked advance in the study of the physiologic function of the sinuses. There is a physiologic function of the various sinuses. And do not forget the tonsil. The tonsil eliminates the substances that the sinuses throw down. For the next few years keep track of the functions of the sinuses, and you will find it will be the greatest subject before the medical profession. I think Dr. Cryer agrees with me, the more the sense of smell is developed the larger the sinuses are, and the smaller the sinuses the less the sense of smell.

DR. J. A. STUCKY, Lexington, Ky.—In regard to what Dr. Mayer says, I thought over the term sinusitis a good deal before using it, but I did not know what other term to use. I am sorry Dr. Mayer did not name it. I said nothing, you will notice, about washing out the sinuses. In the last clause I said that if suppuration results it becomes a surgical case and as such it must be handled. Dr. Randall I think misunderstood me. I have always used transillumination, but I believe it is unreliable. I am glad Dr. Myles called our attention to some matters in this connection that I neglected to mention.

THE X-RAY IN CANCER AND SKIN DISEASES.*

CHAS. W. ALLEN, M.D.

Professor of Dermatology, New York Post-Graduate Medical School; Consulting Dermatologist to the Randall's Island Hospitals; Consulting Genito-Urinary Surgeon to the City Hospital, Etc.

NEW YORK CITY.

Of all the recent advances in the treatment of skin diseases, none has attracted more widespread interest than that of phototherapy. The treatment by light, while not strictly a novelty, has received such an impetus since Finsen first brought out his treatment of smallpox by red light, that actinotherapy, as well as the more recent radiotherapy, can almost be considered a method introducing a new era in the therapy of many affections. While the reports from the application of the Finsen method abroad appear most encouraging, comparatively little of a positive nature is to be reported from this side of the Atlantic. Radiotherapy, on the other hand, although of much more recent development,

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has advanced with such rapid strides that already sufficient reports are available to justify certain definite conclusions. I can not attempt here to collect statistics from the scattered literature, but must content myself with a brief report of my personal experience during the past year.

At the present time I can make a report on 35 cases of cancer of various kinds in which radiotherapy has been employed. Of these 9 were carcinoma of the breast, 6 recurrent and 3 primary. Of these one has died, 3 have ceased treatment, 2 of their own volition and one by my advice, and 5 are still under treatment and all showing improvement. One cancer of the chest wall, with extensive involvement of the skin, extending on both sides of the line of incision, has been discharged apparently or symptomatically cured. The opposite breast is, however, suspected of being involved, and treatment may be resumed for this reason. Of the other, internal or deep-seated cancers, there has been one death in a recurrent cancer of the neck following operation for cancer of tongue; one case of cancer of the rectum, which had improved decidedly up to a certain point, has been forced for some time to interrupt treatment; a cancer of the pelvic organs following removal of the uterus is still under treatment. Three cases of sarcoma, or more properly speaking, 2 of supposed sarcoma, one of the jaw and one of the chest, and a small round celled sarcoma of the finger now involving the meninges of the cord and probably other internal organs, are still under treatment, no positive report of progress being warrantable. In the small cell sarcoma the very worst prognosis has been made and the rays are administered for the patient's mental comfort rather than from any expectation of lasting benefit.

Beside these cases, there are now under treatment 6 patients, one with a rodent ulcer of the lower third of the left arm of twenty years' duration, involving nearly the entire circumference, being nearly three and one-half inches in length and penetrating to the bones and tendons; an epithelioma of the lip in a woman; a recurrent cancer of the lip in a man, and a multiple epithelioma of the face, forehead and neck. This last patient has had the disease for about twenty years, and has lost his left eye by operation on account of the disease, which several years ago invaded the periorbital structures.

Fifteen cases in all have been discharged as cured. These include 6 lesions involving chiefly the nose and lip, 2 the nose and eyelid, one the cheek and eyelid, one the region of the cheek just beneath the eye, 2 the chin, one the forehead, one the chest wall, one the face and eyelid and one of the cheek. Of the cases remaining under treatment, 2 can be regarded as nearly well, and a third has apparently recovered, so far as the skin lesions are concerned, while the eyes, which are both affected by the cancerous process, are making decided progress, though the sight of one eye has been, in all probability, permanently destroyed.

This case is worthy of a moment's consideration, the subject being a boy of 15 years of age, afflicted with the rare dermatological condition of xeroderma pigmentosum, which first began to show itself three years ago. It is of interest to note that this affection, which probably depends in a measure on the effect of exposure to sunlight for its development, should be beneficially influenced by light in another form.

Of the skin diseases proper subjected to the Roentgen ray there have been seven cases of lupus erythematosus, all of which have shown decided improvement, but only one of which is considered cured. There have been four cases of lupus vulgaris; three can be regarded as cured and one is still under treatment very much improved. Eczema of various kinds is represented by ten cases, in which the ray appeared to assist, at times, other coincidentally employed methods. Five cases of inveterate psoriasis have been subjected to the rays with pronounced benefit in at least one of them. Eight cases of sycosis of inveterate form have all shown decided improvement, four having been symptomatically cured. In hypertrophic and rosaceous acne, 2 at least out of 5 cases have shown a marked effect beyond what could be expected from treatment coincidentally employed. Beside these there have been one case of leprosy, the patient claiming that improvement has taken place, and 3 cases of favus, in one of which at least the ray has appeared to be of decided benefit.

Taking, then, this series of cases as a basis for a personal estimate of the value of the *x*-ray as a therapeutic agent, my belief is that while it shows nothing especially brilliant, there are sufficient positive factors to enable us to state that in a class of obstinate and, in many instances practically incurable maladies, so far as other known methods are concerned, we possess in the *x*-ray an adjunct to treatment which bids fair to prove of incalculable benefit.

Care must be exercised in its employment, for it is an element of power which may be exerted for evil as well as for good. Severe cancer, I believe, must be treated with careful oversight, and not left to electricians and non-medical workers in *x*-ray laboratories, with occasional observation on the part of the physician. Symptoms may arise with great suddenness which require modification or entire withdrawal of the rays for a season with substitution of careful medical treatment.

30 East Thirty-third Street.

DISCUSSION.

DR. C. E. SKINNER, New Haven, Conn.—The paper deals with a field of therapy that is entirely new and with diseases that hitherto have been beyond help, such as cancer and other forms of malignant growth, which it had been found by ordinary means impossible to keep in check, and which, in spite of all efforts hitherto, have gone on in their course of destruction. The first question that is usually asked about a new treatment is about the permanency of the results. I would not regard the question of permanence as of so much importance as the actual fact of improvement itself. For instance, if we can succeed in stopping the course of a cancer so that it is cured for the time, it is a great gain, even if in the course of six months or a year the treatment has to be repeated. Even temporary improvement is a great advance, and patients would be willing to return at intervals for treatment that will arrest the disease, even if it does not definitely cure it. I have personally treated, during the last eight months, forty-five cases, most of which have been helped. Seven or eight were breast cases, all of them primary, and none broken down. In only two did I succeed in materially reducing the size of the lumps in the breast; all the others improved so slightly that I can not speak positively, except on one point: in all of the cases, the progress of the disease was checked.

Now, as regards the effect of the rays on metastasis, my opinion is that the metastasis would have occurred more frequently had the *x*-rays not been used. I believe that we are going to find a use for surgery, in the future, in connection with the *x*-rays, to an extent which can not now be anticipated. For instance, in a case of cancer of the breast, with involvement of the axillary glands, and some evidence of extension to the bronchial structures, I think that it would be the proper thing to remove the great mass of the disease by surgical operation, and then apply the *x*-rays until all evidence of the

disease disappears. I have seen several cases of lupus which did not improve, but I have also seen cases get much better.

With regard to the possible unfavorable influence of the *x*-rays, I have seen several cases give evidence of autointoxication while under treatment. One in particular, which had been doing very well, suddenly developed uremia and died in three or four days. It had given no signs of it before. The question, from the standpoint of scientific interest, of whether or not a toxin is developed or liberated and absorbed into the circulation during the treatment by *x*-rays is one of importance and deserving of consideration, especially in those cases where the growth is deeply seated. From a practical standpoint, however, I do not consider that it matters much, as almost any patient afflicted with inoperable cancer will accept nearly all risks from autoinfection or anything else, if, by so doing, he may secure a chance to get rid of the malignant process.

DR. A. W. BAER, Chicago—Dr. Allen spoke of metastasis possibly being excited by the rays. I hardly think there is much in that theory. The rays have been used for some length of time and perhaps a little stronger than necessary, but I have not seen anything that would warrant this opinion. Some patients take less kindly to the treatment than others, but I have never seen it cause metastasis. When cancer forms in the breast opposite from that which has been treated by the *x*-rays, it is because the germs were there also, before the treatment had been instituted. As regards autointoxication and death from uremia, it is possible that the *x*-rays had caused an increased discharge of toxic material into the circulation, which might set up uremic poisoning. In the case cited by the preceding speaker, I think the case would have died in a short time, anyhow. We can hardly blame the treatment for the unfavorable result. The question of sarcoma is a very interesting one. I was very much surprised to learn that any surgeon would recommend operation in osteosarcoma. I have yet to see a sarcoma of the bone which did not return in a very short time after operation. I think the surgeon referred to had carcinoma and sarcoma somewhat mixed. Surgeons do not, as a rule, care to operate on sarcoma of the bone. They will be very glad to be rid of this class of cases and turn them over to the *x*-ray operator. From what we have learned of the *x*-ray, I feel warranted in saying that where there is an inoperable case of carcinoma, or of sarcoma, after the surgeon has removed what he can of the diseased tissue, and has done all that he can, the patient should then be subjected to the *x*-rays. In a case which I supposed to be one of tuberculous ulcer I applied this treatment with striking result. I only made six applications, each lasting 15 or 20 minutes; the first application dried up the secretions and it commenced to heal rapidly, and a few more applications entirely healed it. In this case I used a mask and held the patient's face within 2 or 3 inches of the tube. The proper duration and distance depend on the patient and the kind of apparatus used: whether a static machine or a coil, as well as on the character of the tube. I have never yet seen a static machine that heated the platinum, but I have seen a coil apparatus heat the platinum in a quarter of a minute. Experience with each form is required in order to overcome difficulties and to obtain the most satisfactory results.

DR. HENRY VARNEY, Detroit—I have worked with both the static and coil. I have found—as has just been stated—that the coil will heat the platinum point very rapidly, because of its high amperage, compared with the static. On this account, one can not make a very long exposure with the coil, even with the mildest ray. That variety of machine is expensive to operate and dangerous to the patient. I do the greater part of my work with a static machine, and find it most satisfactory.

With a highly interrupted small static exciter, exposures may be given every day, bringing about a gradual stimulation which is less liable to destroy new tissue. I do not say that it will not cause a burn, because in the treatment of sarcoma and carcinoma, I have found it necessary to burn into the true skin before the condition was influenced, but with it the extent of the burn can be gauged from an erythema days before a dermatitis or destruction of the true skin occurs. With regard to cases of uremia or, more likely, ray-toxemia, from overloading of the eliminative system, as would be caused from an extensive burn, a great amount of interest is excited. Within the past month patients have complained of rheumatism weeks after exposures have been given, where large areas were exposed, and it was the first time they had had an attack. I think there is need of further investigation in this direction, and I suggest that Drs. Allen and Skinner and other operators study the exeretions of patients before, during and after treatment, and see if more light can not be thrown on this condition resembling rheumatism.

Referring to the penetrating power of the static apparatus as compared with the coil, I believe that with a hard tube great penetration may be had. Six months ago it was thought that we could get any penetration or stimulation. I had a case of epithelioma that involved the whole breast, axilla and two inches on the back, measuring seven and three-quarter inches in length by eight and three-quarters in width. In exposing the ulcer anteriorly, the back healed almost as rapidly as the anterior surface, by the rays passing through the patient's body, showing clearly the penetrating power of the static apparatus. I have many cases of osteosarcoma and carcinoma that have been operated on, the rays being given to prevent a recurrence. My experience warrants the statement that every case of malignant nature that has been operated on should subsequently be treated with the rays, in order to prevent recurrence, because of the influence of the rays in restoring normal cell action.

DR. CHARLES W. ALLEN, New York—I am very glad to hear the remarks concerning sarcoma and surgical operation. This is a tender point with me, because a reputable surgeon must know that most sarcomata ordinarily do not do well after surgical operation, and the interest of the profession is now excited by the favorable reports of the effects of the *x*-rays on this class of cases. In view of these reports, I think such patients should have the benefit of this treatment.

As regards the occurrence of toxic symptoms, I have observed joint and muscular pains of rheumatic character during treatment. This suggested to my mind the possibility of a poison being given off into the general system from the growth, and being thrown off so suddenly that the eliminating organs had not been able to take care of it. The source is the mass of broken down organic elements resulting from destruction of the growth. This is what I meant by saying that the *x*-rays are capable of doing harm, and that their application should not be left in the hands of inexperienced and non-medical men. Dr. Varney has said that you will have a warning before a serious burn occurs, by the appearance of an erythema. A burning sensation is at times the earliest warning. When the erythema appears the warning is usually too late, because burning has already taken place.

As to the kind of machine to employ, my preference is for the static for therapeutic effects. It has been claimed by some that the whole effect of radiation is due to electric action on the tissues. This may possibly be true; we can not say positively yet to what the action is due. When the rays pass through the body, some of the effects may be due to electricity. Different methods may be combined with the *x*-ray treatment, internal remedies may be given at the same time and caustic pastes may be at times employed to hasten the process. A preliminary course of treatment before cutting might be of advantage, as well as the post-operative. I am treating a tumor in the breast of a young woman, and holding the question of operation in reserve while watching the effect on the growth. It would be of advantage, it would seem, to have the progress of the disease checked previous to operation. After all operations, however, I would use the *x*-rays for a considerable time, perhaps a number of months subsequently, in order to prevent the return of the disease. I have had no experience as to the value of *x*-rays in the treatment of cancer of the stomach, or, at least, none that will warrant any deductions as to the value of this treatment, though I have treated cancer of intestinal, rectal and pelvic organ origin with evidence of decided effect.

RADIOTHERAPEUTIC OBSERVATIONS.*

JOSEPH ZEISLER, M.D.
PROFESSOR OF DERMATOLOGY, NORTHWESTERN UNIVERSITY.
CHICAGO.

The employment of the mysterious *x*-rays for the treatment of various skin diseases has ceased to be the monopoly of a few privileged promoters and is gradually becoming almost indispensable in the work of the up-to-date dermatologist. Much has been learned in this new field of practical medicine. More remains to be accomplished before the new agent can be handled with scientific accuracy. At the present moment there is still a deplorable diversity of opinion concerning some vital points in the theory and practice of radiotherapy. The controversy as to the real active principle emanating from the Crookes' tube is apparently still unsettled. Freund and Kienboeck may be mentioned as important representatives of the two opposing factions. The former, after persistently attributing the bulk of the *x*-ray effects to peculiar electric discharges or waves from the tube, seems of late to somewhat recede from his position. Kienboeck, who regards the Roentgen rays as the efficient element, has a host of followers, among whom I am willing to be counted. It seems to me that comparisons with the well-known effects of the Finsen light therapy, and even with those of continued exposure to ordinary strong sunlight, make it more than plausible that the clinical manifestations following *x*-ray exposure can be explained without giving to the electric shocks coming from the tube more than a coincidental rôle. With all deference to certain experts in electricity I can therefore take little stock in their attempts to establish those clinical results on the basis of electrolytic action.

TECHNIC.

The whole question here alluded to has more than merely theoretic value. Inseparably coupled with it is the selection of the proper tube for our work, whether a hard or a soft one. Whoever is after the display of electric action will take a hard tube. He can get an abundance of electric waves out of it with a scarcity of rays. Accordingly, the desired irritative or resolvent effects on the skin will be slow in making their appearance. On the other hand, the soft tube emits hardly a spark when in contact with our hand, but gives a light rich in Roentgen rays. Its clinical effects are prompt and energetic. These are established facts and admit of no discussion. Furthermore, it is generally admitted that the rays of a hard tube have a penetrating action and may easily cause far-reaching destruction, while the rays of the soft tube are absorbed by the upper layers of the skin.

Much of the success in *x*-ray work depends on the proper apparatus. The static machines are hardly fit for dermatologic purposes. A good induction coil only is to be considered. In my own equipment, which has given perfect satisfaction, the direct street current is utilized, allowing a maximum of 150 volts. It is conducted into a wall plate containing volt meter and ampere meter, rheostat and speed regulator, allowing up to 2,400 interruptions to the minute. From the wall plate the current is directed through a motor and into a rotary mercury-petroleum interruptor, and from there to the coil, which is capable of a 12-inch spark. The latter is so constructed that of the three parallel spirals constituting the primary spool, one only, two or all three may be energized through a special system of switches. In this way all gradations from the softest, barely noticeable light to a rich green one can be generated. Without resorting to the rheostat the voltage varies accordingly from about 65 to 85, while the amperage recorded shows in inverse proportion from 4 to 1½. I purposely mention these figures as very different from other authors; for instance, Schiff and Freund, who advocate a current of 12 volts with an amperage of 1½ to 2. The fact of the matter is that while proper registrations of the intensity of the current are of interest, reference to them is of value only when the identical apparatus is used by another. The essential element in determining the energy with which we work is the character of the light irrespective of either voltage or amperage. There are some special photometric devices designed to ascertain the strength of the light, but they are little used and of minor value for practical work. To the beginner the frequent use of the fluoroscope will be of inestimable service, and Kienboeck's directions in this regard, and his sketches illustrating the shadow of the hand from tubes of varying degrees of vacuity were much appreciated by me. Gradually one learns to judge the condition of the tube by mere inspection and by the aid of the ear. The intensity of the light is, however, only one of the factors constituting the desired dosage. The distance of the tube from the radiated surface and the time of exposure are of equal if not more importance. The often-heard advice to use only the "softest light" must therefore be taken *cum grano salis*. If I place my tube with its strongest possible light at a proper distance, say 40 centimeters, I can use it safely for what might be called a mild exposure.

As to the tube itself, I would strongly recommend the use of self-regulating tubes after the pattern of the Müller tube. While much more expensive than the ordinary cheaper ones they have a great endurance and I have repeatedly used them for more than one hundred strong exposures without exhausting them. Two principal methods of employing the rays may be mentioned. The one first advocated by Schiff and Freund, and followed by Pusey, is to use a soft light in short sittings in frequent, even daily, intervals until a reaction sets in. This is surely a safe method though rather slow in many cases, and as for out-of-town patients, who come for an occasional treatment only, quite impracticable. The other plan, according to Kienboeck, is to give what he calls a normal exposure, i. e., the use of a powerful light for a period of about twenty minutes in a single sitting, after which an interval is allowed and the reaction is waited for. One such normal exposure will often be sufficient to produce the dehiscence of hair from the radiated area. This method requires a good deal of experience. I have followed it repeatedly and have never had any serious consequences. I have more often, however, taken the middle ground and have used ten-minute exposures at intervals of a day or two to the number of from five to eight, when usually a decided reaction would take place. The proper method to be followed will depend to a large measure on the nature of the case and other circumstances, as I may mention later on. Whoever is making extensive use of the Roentgen rays is bound to have, sooner or later, some unpleasant experience with the much-dreaded *x*-ray burns. This is due to the well-known observation that the effect of the radiations is cumulative and that the reaction, even after powerful exposures, requires eight to ten days to become at all noticeable and will then

* Read before the American Dermatological Association, at Boston, Sept. 19, 1902.

gradually reach its climax within the following week or two. Unfamiliarity with this important fact may lead the beginner to persist in continued strong exposures up to a point when damage can not be undone. The three or four cases in which I produced a powerful reaction, consisting in acute dermatitis with oozing, crusting, etc., yielded readily to simple treatment within a week and caused little anxiety to either patients or myself, and left no permanent injury. I have never caused any sort of ulceration or sloughing. This may be explained from the fact that the light from the soft tube, which I have employed exclusively, has a rather superficial effect and does not penetrate into deeper tissues. Yet I feel that in the future even temporary dermatitis will easily be avoided by me, and my remarks may serve to keep others from similar accidents, for the ideal way of using *x*-rays in the majority of cases is surely to produce our results with the least irritation. In this connection a word about individual idiosyncrasy may not be amiss. Kienboeck believes that there is no such thing. Still the time required to produce a reaction surely varies in different patients, and particularly is there a notable difference in the resistance in various tissues. Pathologic cell aggregations, for instance lupus nodules, will be influenced much more readily than normal skin.

The protection of such parts as are not to be exposed to the rays is an important point in the technic. I have used for this purpose thick sheet lead, which is easily molded and cut into any desired shape, and had them lined with flannel. I would particularly warn against the careless exposure of the lips, which are most susceptible to irritation by the rays. In treating the face I always cover the eyes and the hair of the head.

During the six months, from March 1 to September 1, I have subjected 81 patients to radiographic treatment as follows: Lupus vulgaris, 1; lupus erythematosus, 1; scrofuloderma (tuberculosis of the shoulder joint), 1; hypertrichosis, 11; sycosis, 4; acne (all forms), 34; epithelioma, 9; psoriasis, 3; lichen planus hypertrophicus, 2; dermatitis staphylogenes, 1; eczema, 4; keratosis palmaris, 3; clavus, 1; pruritus, 1; hyperidrosis nasi, 2; non-dermatologic affections, 3.

I shall in the following very briefly and summarily report my observations in these cases:

LUPUS VULGARIS.

To the many cases of successful treatment of this affection by *x*-rays recorded in literature I am able to add one more, a typical instance of this disease.

CASE 1.—My patient, about 50 years old, has been affected by lupus of the face since his early childhood, and has ever since been under treatment of a more or less radical character. I have myself had him under my care for the past eight years with little more than temporary benefit, having employed the well-recognized former modes of treatment, as cauterizations, curetting, dissection of the nodules, galvano-cautery and the like. The affection consisted in multiple, dry, deep-seated gelatinous nodules, isolated or forming small patches and practically covering the whole of the right cheek, extending over the bridge of the nose and encircling the lower eyelid, which as a result of surgical interference, undertaken in early childhood and consisting in an unsuccessful transplantation of skin has ever since been entirely everted. From the beginning of March to the end of July I made use of *x*-ray exposures in this case, starting at first on a small patch the size of a dollar. Seven ten-minute sittings during a period of about ten days caused a distinct superficial irritation, which developed promptly into a shallow eroded surface showing small depressions in the place of the former nodules. With nosophen dressings the patch healed up within about a week, giving a smooth, slightly reddened scar. In this manner the principal locations of the trouble were gone over successively. During the latter part of the treatment the whole area, as far as possible, was subjected *in toto* to mild ray exposures, and the interesting observation could be made that an irritation would appear only where lupus tissue was still present, while the previously treated areas exhibited no sign of further irritation.

While I am not prepared to pass final judgment about the outcome in this case, I am able to say that the result of the treatment so far was in every way highly satisfactory and far superior to any other method known to me, except, perhaps, that of Finsen. The perfect painlessness of the treatment and the smoothness of the scars are particularly noteworthy.

LUPUS ERYTHEMATOSUS.

A patient who is still under my care had a very characteristic and inveterate case of this affection.

CASE 2.—A women, 56 years old, who had a lupus covering almost the whole of the face, with isolated patches behind the ears, was treated by me with *x*-rays during the two months, July and August. Three treatments a week for ten minutes with a strong light, at a distance of about 15 cm., were given to one side of the face only, while the other was treated with resorcin lotion. After four weeks the improvement on the radiated side was very marked, the color of the patches becoming very pale, and the desquamation being markedly diminished. A period of rest was allowed for this side, while the other half of the face was then likewise exposed with similarly good results.

SCROFULODERMA.

CASE 3.—A young man, 23 years old, came to me April 15 with two large ulcers on the left upper arm, showing all the familiar characteristics of scrofuloderma. They distinctly connected with a tuberculous focus in or about the shoulder joint, and copious masses of thin, yellowish pus were discharged with each dressing from those ulcers. The patient was emaciated and had temperatures from 101 to 102. Radiations were given 3 to 4 times a week with a powerful light, at a distance of about 10 cm., over the whole region of the shoulder and including the ulcerated surfaces. After only six exposures the discharge of pus became very scanty, and disappeared almost entirely within the next three weeks. At the end of five weeks' treatment the ulcers were healed up, with the exception of a small area the size of about a pea, when the patient desired to be temporarily dismissed in order to go to his distant home. I have quite recently seen him again, and found him in every way much improved; the pain in the shoulder joint almost entirely gone, the mobility much improved, the weight of the patient increased by twenty-three pounds, absolutely no temperature, and the former ulcerations entirely healed up. There was, however, a small new abscess formation on the posterior part of the shoulder, on account of which the radiations were resumed.

HYPERTRICHOSIS.

I have often heard the remark from colleagues engaged in this line of work that they consider the treatment of hypertrichosis by Roentgen rays as a very delicate and uncertain affair. One of them, in answer to my direct question, once mentioned that he had given over seventy exposures to a woman thus afflicted. My own experience in the eleven cases thus treated have made me rather optimistic concerning what can be accomplished here. I have invariably made use of what has been before referred to as normal exposures, and have found that three to five such exposures, given at intervals of a week or two, will produce complete epilation. As several of my patients were living out of town and could come for a treatment only at long intervals, this method was the only one to be selected. The reaction consisted, as a rule, in marked pigmentation and temporary erythema which yielded gradually.

My patients have all been instructed that the epilation following one series of treatments is not to be considered as permanent, but that radiations should be resumed at intervals of, at first, two months, and later on longer periods without waiting for a return of the hair.

Whoever has had much experience in the electrolytic destruction of superfluous hairs will be bound to consider this new method a veritable boon to both operator and patient. One lady, with a very extensive growth all over the chin and somewhat on the cheeks, and who had formerly received many electrolytic sittings at my hands, remarked to me, after her third *x*-ray treatment, when all the hair from the radiated surface had fallen out, that she would never under any circumstances again submit to the electric needle.

As regards the final effect on the skin, I have been unable in my cases to verify Ehrmann's observation of an atrophy of the skin following this treatment.

SYCOSIS.

Of the four cases of sycosis which I have treated, two were very severe and inveterate. In one case it had affected the whole chin for a period of two years; in the other the lip had been the seat of the trouble for more than four years. The cases were both of the coccogenic variety and showed multiple follicular miliary abscesses. The treatment required was seven exposures for the one and eight for the other. The exposures were given at a close distance for ten minutes daily. The result of the treatment surpassed my most sanguine expectations. After two or three radiations pustules ceased to form. The reaction produced was very moderate. Defluvium commenced about two weeks after the beginning of the treatment and with it all inflammatory phenomena disappeared completely. The skin looked entirely normal, except slightly pigmented and reddened. These cases have since remained under my continued observation. About two months after epilation had become complete new hair began to show and has since grown out all over the affected areas. In spite of this there is so far no sign of relapse. Absolutely no other treatment had been given in these cases.

ACNE.

The thirty-four cases mentioned above comprise several varieties and all degrees of severity of acne. Five of them were instances of acne rosacea; one belonged to the type of acne necrotisans; four cases were indurated and pustular acne of the back and shoulders. The bulk of them were, of course, of the ordinary type of acne of the face, many of them of the very severest and most rebellious nature. It would entirely surpass the intention of this communication to go into details of all these cases. I would only remark in general that their management differed considerably from that employed in the previously named affections, in that the exposures were rather mild in character, the distance of the tube, according to its light, being from 20 to 40 cm.

My plan in these cases is usually to start in with three treatments a week for from two to three weeks. After this exposures are given twice weekly only for a time, and later on about once a week. A beneficial action can usually be noticed during the second week, when few new pustules are noted and the comedones seem to shrink and dry up. The accompanying seborrhea oleosa of the face is very promptly influenced. Some of the severest cases which I have ever treated were cured in from four to six weeks and have so far remained well.

If I think of the many years of hard and persistent work which I have formerly given these cases in the way of local treatment, consisting in the opening of abscesses, the removal of comedones, curetting, caustic applications and the like, with but fair results, and compare with that my present management of these cases and its almost uniformly excellent therapeutic effects, I can only regret that Roentgen's wonderful discovery was not made twenty-five years ago.

I am not prepared to draw final conclusions from my observations as to the etiologic nature of acne, but my long-held belief, that constitutional causes are foremost in its production, has now become considerably modified.

EPITHELIOMA.

From all appearances the use of *x*-rays for the eradication of epithelioma means a remarkable progress in this department of surgery. My own observations in nine cases of this kind are certainly such as to make me rather enthusiastic in this respect. My cases were all of the superficial variety. As to location, three were situated on the side of the nose, one on the lower lip, one on the lower eyelid, one near the tip of the tongue, one on the glans penis, one on the back of the hand and one on the forehead. Three of them were relapsing forms and had been previously treated by me by curetting and cauterization. In these latter cases the diagnosis had been established previously by microscopic examination. In the others this additional help to the diagnosis was considered undesirable, as a removal of tissue would be contrary to the conservative plan of radiotherapy. The treatments were given with a strong light, the distance of the tube being from 5 to 10 cm., the sittings being ten minutes, repeated at daily intervals for a time, and then only every two to three days. The case of epithelioma of the lower lip was demonstrated before my class at the Northwestern University before the beginning of the treatment, and afterwards when cured. It required ten treatments during a period of four weeks. The one on the tongue yielded to twelve exposures given during three weeks. In only one case was there produced a reaction amounting to severe dermatitis. In most of them the exposures were interrupted at the first sign of a slight irritation and further results waited for. In all of them, I am happy to record, at least for the time being, a recovery.

A comparison of this method with all others known, both by surgical means and by caustics, must necessarily establish a vast superiority of radiotherapy, not only as regards its absolute painlessness, but also as regards the condition of the scars. Whether the results attained in my own cases and in the many reported by Pusey and others will prove permanent, remains to be seen; but to my mind the elective and deep-reaching action of the rays seems more radical than any surgical interference possibly could be.

PSORIASIS.

The three cases of this affection were selected with regard to special location of the disease. They were cases in which a few regions only were invaded by particularly stubborn manifestations; in one of them the knees only, in another the arm, showed a large infiltrated scaly patch; in a third the lower limbs were exposed to the rays. Exposures were made with a mild light at a distance of from 15 to 20 cm., in order to take in the whole affected area. Results were noticeable after from eight to ten exposures, and were on the whole satisfactory. In one of them the benefit has lasted for more than four months. We know from other observations recorded in literature that beneficial results by *x*-rays in

psoriasis are, however, not to be considered as permanent.

LICHEN PLANUS.

Similar results were obtained in two cases of lichen planus hypertrophicus located over the tibial region. One such patch, which had obstinately resisted various plans of treatment, even as energetic as thorough curetting, disappeared in an almost marvelous way after four strong exposures, given at intervals of five days each, and left the skin in a perfectly normal condition.

ECZEMA AND PRURITUS.

I have made use of *x*-rays only for isolated, chronic infiltrated patches of eczema, and my results seem to me very encouraging. One case of pruritus genitalis was much benefited by three mild exposures.

KERATOSIS PALMARIS.

I am sure that most dermatologists will agree with me concerning the great difficulty of successfully treating this condition. My own experience, at least, has always been very disappointing. The three cases of this affection which I submitted to radiotherapy were inveterate forms and covered in one instance the palmar surface of both hands, including the fingers, and in the other two circumscribed patches of the size of a dollar on each palm. The effect of the rays in these cases was, to say the least, surprising. One case seemed perfectly restored after five strong exposures.

CLAVUS.

CASE 4.—About the middle of July I was visited by a young gentleman, 23 years old, who complained that for the past two years his life had been made perfectly miserable by the presence of numerous soft corns on the soles of his feet. The affection was symmetrical and consisted in upward of sixty soft corns distributed over the plantar surfaces of all the toes and the adjacent regions of the sole. While a single corn may be a trivial affection, a trouble like this one surely deserves the earnest attention of the dermatologist. I learned from my patient that all sorts of treatments, including excision, keratolytic ointments, special pads, etc., had been tried in vain, and I therefore resorted at once, as an experiment, to the use of *x*-ray exposures. I gave twelve daily exposures with a strong light, at a distance of 10 cm., for ten minutes each. No visible reaction resulted, but the treatments had to be discontinued as I left for my vacation. Three weeks later, when I returned, my patient exhibited his feet to me, and to my great delight he was absolutely and perfectly free from all his corns and has remained so to this day.

HYPERIDROSIS NASI.

Two cases of this kind were subjected to radiotherapy, with the expectation that the rays would assist in limiting the excessive oiliness in analogy to their action in acne. Ten mild radiations were given in one of these cases at intervals of from three to four days, and the result as regards the size of the follicles and the secretion was satisfactory.

DERMATITIS STAPHYLOGENES.

CASE 5.—This was a remarkable case of an inflammatory affection, covering the back of the right hand, consisting of an eruption of multiple pustules, weeping and the other signs of an acute dermatitis. This condition seemed to me to be secondary to previous energetic treatment by the home physician, Dr. Sauerhering, Wausau, Wis., consisting in electrocautery for a trouble, the nature of which I could only guess, but in regard to which I had microscopic findings by Professor Zeit of Northwestern University, who declared that there was nothing malignant present, at any rate no tuberculosis. As the condition had rebelliously resisted continued treatment in various ways before, I decided to employ *x*-ray exposures. These were given with a strong light at a distance of about 10 cm. for ten successive days, when there was a decided erythema surrounding the affected patch. The pustules, however, had ceased making their appearance after the first few treatments, and the oozing had become considerably lessened. The patient was very anxious to leave for his home, but reported to me two weeks later that his hand was perfectly cured.

Of non-dermatologic affections I have used the rays in two cases of acute epididymitis, but was unable to say whether they helped the progress of the cases very much. In a case of hip-joint disease, in which I was asked to administer the rays, the effect in alleviating pain was very noticeable.

CONCLUSION.

Were I to attempt an explanation of the beneficial action of the *x*-rays in all these cases I would surely side with those who deny any particular effect on microorganisms, but who, basing their opinion on microscopic evidence, as does Scholtz, attribute to the rays a special affinity for pathologic cell formations, which, under the influence of the rays, undergo metabolic changes and even entire disintegration.

In conclusion, I can only say that my experience with radiotherapy so far has made me an ardent advocate of it, and I believe that until it is replaced by something still more marvelous it will constitute one of the most effective weapons in our fight against a large class of dermatologic affections.

THE PROGNOSTIC VALUE OF TUBERCLE BACILLI IN SPUTUM.

LAWRASON BROWN, M.D.
RESIDENT PHYSICIAN, ADIRONDACK COTTAGE SANITARIUM.
SARANAC LAKE, N. Y.

The sputum of each patient at the Adirondack Cottage Sanitarium is carefully examined every six weeks. In this paper the results of these observations carried out at the sanitarium during the last two years have been made use of to determine the possible prognostic value of quantitative and qualitative changes in the tubercle bacilli occurring in the sputum of phthisis. Before giving the results of the observations it might be well to recall briefly a few facts which, though thoroughly familiar, are of sufficient importance to review at this time.

Pulmonary tuberculosis has no characteristic form of sputum. It may vary in quantity from almost nothing to even 1,000 c.c. in twenty-four hours. The absence of sputum is no better sign of the absence of pulmonary tuberculosis than is the absence of cough. An abundant, mucoid, more or less frothy sputum, which often contains no tubercle bacilli, at times marks the onset of miliary tuberculosis on a chronic or less acute form of the disease. In fibroid tuberculosis of the lungs there may be little or no expectoration and no tubercle bacilli may be found for long periods.

The character of the sputum macroscopically is no absolute criterion of the presence or absence of the tubercle bacilli. Tubercle bacilli may occur in watery mucoid sputum, as well as in the usual mucopurulent variety. Tubercle bacilli may occur by millions in one part of a specimen and be absent from another. The bearing of this fact on the number of the bacilli in a specimen is readily seen.

The staining properties of the tubercle bacillus depend on its resistance to decolorization. As some hold that many of the tubercle bacilli in a preparation are not stained when it is ready for examination, the great value of sufficiently overstaining is easily seen. Carbol fuch-

sin is the best stain. If the quick method of employing heat is used a small flame is best. The fluid should be brought just to boiling, or better, until bubbles are seen to collect about the thicker parts of the smear. This heat should be kept up one to five minutes, or until crystals of fuchsin form on the surface of the fluid. The preparation should never be allowed to become dry on account of the difficulty in decolorizing. If the "cold method" is employed, the preparation should be left completely immersed in the carbol fuchsin for twenty-four hours.

Nitric acid (25 per cent.) and alcohol are the only safe agents to be used in decolorization, which can, if necessary, be controlled by the low power of the microscope. In the routine examinations after admission to the sanitarium Gabbett's method is used.

Recently some German observers have called attention to a number of bacilli which resist decolorization by acids and more or less resemble the tubercle bacilli in appearance. These have been described under the names of timothy-hay bacillus, grass bacillus, the butter bacillus, etc. Like the smegma bacillus and the bacilli of syphilis and leprosy, they all stain in carbol fuchsin and resist decolorization by acids to some extent. Ophüls of San Francisco and others in the last few weeks have published a list of several cases of pulmonary gangrene in which the sputum contained an acid-resisting bacillus.

With Gabbett's solution (1 gm. methylene blue in 100 c.c. 25 per cent. H2 SO4) some of these bacilli may escape decolorization and consequently nitric acid and alcohol should be used in any specimen for diagnosis.

"The tubercle bacilli," writes Fischel,[1] "is not an end form, but one form of the cycle of a rod-shaped bacterium." It usually occurs as a rod-shaped organism 1.5-3.5 microns long and about 0.2 microns in breadth. It has been seen 11 microns long. The shorter the bacillus the more apt it is to be straight. It is usually bent, sometimes curved, crescentic, or even like a spirillum or spirochete. It occurs at times in chains, and branching forms have been recorded by a number of observers.

The beaded forms have caused much discussion. Koch, in his early papers, held the clear refracting spaces to be spores, and many have followed his lead. They occur 1 to 8 in a bacillus, and are separated in stained specimens by round- or rod-shaped granules deeply stained in a lightly-stained capsule. The clear spaces are now held to be vacuoles, due to plasmolysis. Every observer has noted "nucleated" tubercle bacilli, i. e., bacilli containing more deeply stained rounded masses. These resist decolorization more strongly than the remainder of the bacillus, and at times resemble short chains of cocci. This is the explanation of the affirmation made by some that tubercle bacilli may become cocci. That these, too, are not spores is upheld by the fact that they have not been shown to resist drying and disinfection to any greater degree than the bacillus, nor have they ever been shown to germinate.

The club- or knob-shaped swellings at the end of the tubercle bacillus in some specimens are asserted by Coppen Jones[2] and others to be spores. This observer would place the tubercle bacillus very near the actinomyces, which reproduces itself in this manner. But it is much more likely that this form, with the two preceding, are all types of degeneration.

The arrangement of the tubercle bacilli in any specimen can not be told from what is found in a single slide. They occur often in clumps, often diffusely scattered throughout the specimens. At times they occur in groups of two, three or four, with their long axes more or less parallel. Occasionally they are found to be intracellular, in leucocytes or alveolar cells. Very occasionally they occur in enormous masses, such as are found in smears from cultures.

In tabulating I have used Dr. Trudeau's classification, which is substantially as follows:

Incipient stage: Slight local, with little or no constitutional involvement.

Advanced stage: The localized disease—process extensive or in an advanced stage; or slight local pulmonic invasion, with rather marked constitutional involvement or with complications.

Far advanced stage: Marked signs of pulmonic disintegration, with marked constitutional symptoms.

Improved condition: Physical signs showing process less active, or general health improved with symptoms relieved or abated.

Arrested: No activity in process in lungs, with absence of fever and other constitutional symptoms.

Apparently cured: Abnormal physical signs absent, or if present only slight and indicative of healed lesion. Absence for some months of pyrexia and of sputum or of sputum containing tubercle bacilli.

In tabulating the number of tubercle bacilli I have, with a few modifications, used Gaffky's scheme,[3] which is extensively employed at the foreign sanatoria.

1. Only 1-4 bacilli in whole preparation.
2. Only 1 bacillus on average in many fields.
3. Only 1 bacillus on average in each field.
4. 2-3 bacilli on average in each field.
5. 4-6 bacilli on average in each field.
6. 7-12 bacilli on average in each field.
7. Fairly numerous on average in each field.
8. Numerous on average in many fields.
9. Very numerous on average in many fields.
10. Enormous masses on average in many fields.

The modifications I have adopted consist in replacing "fairly numerous" by "13-25"; "numerous" by "about 50"; "very numerous" by "about 100 or more." In using this table Gaffky recommends that a Zeiss homogeneous oil immersion 1-12 and a No. 2 ocular at a definite tube length be employed.

TABLE 1.—Statistics of various stages treated with the frequency with which tubercle bacilli were discovered in the sputum.

Condition on Admission.	T. B. Found.		Condition on Discharge.				
			Apparently Cured.	Discharge Arrested.	Improved.	Unimprov'd.	Failed.
Incipient, 76; or 30 per cent.	On admission	10	5	4	1	.	.
	On discharge	3	.	3	.	.	.
	Both on admission and discharge	5	.	5	.	.	.
	During term	2	2	.	.	.	.
	Not found or no sputum	56	43	7	6	.	.
Advanced, 164; or 63 per cent.	On admission	46	9	29	8	.	.
	On discharge	7	.	5	2	.	.
	Both on admission and discharge	72	.	40	25	2	5
	During term	6	1	5	.	.	.
	Not found or no sputum	33	11	15	6	.	1
Far advanced, 19; or 7 per cent.	On admission	7	.	1	6	.	.
	On discharge	.	.	.	.	.	.
	Both on admission and discharge	11	.	1	7	.	3
	During term	.	.	.	.	.	.
	Not found or no sputum	1	.	.	.	1	.
Total		259	71	115	61	3	9
Per cent.			27	44	24	1	4

Of the 169 cases with tubercle bacilli 71, or 42 per cent., had lost their bacilli on discharge. Of these 71 cases 52, or 73 per cent., were advanced, 7, or 10 per cent., far advanced, and 12, or 17 per cent., incipient. Of these incipient cases 9, or 75 per cent., were apparently

cured; of the advanced 10, or 19 per cent., were apparently cured. From these figures may be seen:

1. That the earlier the diagnosis the better were the chances for recovery.

2. That when the diagnosis was made before tubercle bacilli were found in the suptum, i. e., before ulceration had begun, the chances for recovery were at least twice as good and, on the whole, seemed many times better.

3. That when tubercle bacilli were once found, while a goodly number were arrested (many of which will no doubt be "cures" later), only a comparative few were "cured" during their treatment in the sanitarium, which on an average was four or five months.

These observations seem to draw us inevitably to the conclusion that we must leave no stone unturned to make in pulmonary tuberculosis an early diagnosis and to subject the patient to treatment immediately.

TABLE 2.—The frequency of the occurrence of tubercle bacilli in the sputum.

			Apparently cured Per cent.	Arrested. Per cent.	Improved. Per cent.	Failed. Per cent.
In all	259	Of these	27	44	24	5
Of all	With tubercle bacilli, 169; or 65 per cent	"	10	55	29	6
	Without tubercle bacilli, 90; or 35 per cent..	"	60	25	14	1
Incipient, 76; or 30 per c.	With tubercle bacilli, 20; or 26 per cent	"	35	60	5	5
	Without tubercle bacilli, 56; or 74 per cent..	"	77	13	10	0
Advanced, 164; or 63 per cent.	With tubercle bacilli, 131; or 80 per cent	"	8	60	27	5
	Without tubercle bacilli, 33; or 20 per cent..	"	33	45	19	3
Far advanced, 19; or 7 per cent.	With tubercle bacilli, 18; or 94 per cent	"	0	11	72	17
	Without tubercle bacilli, 1; or 6 per cent	"	0	0	0	100

TABLE 3.—The occurrence of morphologic variations and of distribution of tubercle bacilli in 150 cases. The number of Gaffky's scheme in table indicates that on the average it is the most common enumeration.

	No. of Cases.	No. Gaffky.	Long.	Beaded.	Thin.	Medium.	Short.	Thick.	Knobs.	Irregular.	Nodes.	Clumps.	Clumps; Close.	Clumps; Loose.	Chains.	Parallel Pairs.
C	13	IV	10	11	1	5	3	3	.	.	1	9	2	.	1	1
Per cent	9		76	85	7	38	23	23	.	.	7	69	22	.	7	7
Arrested	85	VI	82	70	23	50	33	37	6	8	20	66	34	13	8	12
Per cent	57		96	84	32	31	34	44	7	9	24	78	57	22	9	34
Improved	41	VII	40	32	19	13	22	21	3	4	11	33	15	9	5	6
Per cent	27		99	80	23	32	54	51	7	10	27	80	45	27	12	15
Failed	11	VIII	11	9	2	0	6	5	1	2	4	9	5	4	0	1
Per cent	7		100	80	17	.	55	45	10	17	36	82	55	44	.	10
Total	150															

In 150 cases careful observations were made on the number, appearance and distribution of the tubercle bacilli in the sputum. Of the 150 cases 13, or 9 per cent., were apparently cured; 85, or 57 per cent., arrested; 41, or 27 per cent., improved, and 11, or 7 per cent., failed.

The number of tubercle bacilli seemed to vary on the whole directly with the severity of the case. Thus, the number "Gaffky" was IV in the cases apparently cured, VI in the arrested, VII in the improved and VIII in the cases that failed. The number "Gaffky" of any case was not based on one or two preparations from one specimen of sputum, but on two preparations from a number of specimens of sputum. During the past year we have discharged four patients, each of whom had tubercle bacilli in his sputum in enormous and innumerable numbers on one or more examinations. One of these was discharged apparently cured, two arrested and one improved. The masses of tubercle bacilli probably came from a disease process of a similar nature in each, i. e., the sloughing of a necrotic mass. Three of the cases had large cavities, one was an incipient case, showing a very slight lesion. In the latter the bacilli disappeared, while in the other cases, though they diminished somewhat, they were at times present in considerable numbers. My observations lead me to hold that as a patient improves there is frequently a steady decrease in the number of tubercle bacilli. The continuous occurrence of large numbers of tubercle bacilli indicates, as Brieger[4] says, the probable existence of a cavity. The occurrence of many and very few tubercle bacilli at intervals suggests a cavity that is occasionally blocked.

The absence of tubercle bacilli in the sputum is the condition *sine qua non* of healed tuberculosis, for, as Dettweiler[5] says, of what value would be the long-held maxim that the tubercle bacillus is the cause of tuberculosis, and where the tubercle bacillus is there is tuberculosis; of what value, otherwise, he says, would this be? The continued presence of bacilli in the sputum does not necessarily mean that the disease is in active progress. Dr. Fowler[6] reported a case in 1895 where bacilli had been found on every examination for fourteen years. During that period the patient was actively at work, and was, at the time of the report, better than he was in 1882. Dr. Trudeau has had a somewhat similar experience, tubercle bacilli being found for ten years, the greater part of which the patient spent in active work.

When we recall that only a fraction of the number of bacilli in any preparation appear stained when it is examined; that old foci may give off very few and young foci no bacilli at all, however actively they are forming; that the occlusion of a bronchus may shut off the focus entirely for a time; when we consider these things we see how little can be inferred from the number of bacilli present in any single preparation.

As regards the appearance of the bacilli, my notes would indicate that "beading" occurred equally in all classes of cases. The length seemed to vary somewhat with results of treatment. There were fewest long and short bacilli and most medium-sized in the cases apparently cured. The number of long and short bacilli was greater in the arrested and improved cases and most in the cases that failed, but the difference was not marked. The variation in thickness was not pronounced sufficiently to enable any conclusion to be drawn from it, and may be explained by differences in staining. The cases that failed contained the largest number of irregular bacilli as well as the largest number of the deeply-staining bodies previously mentioned.

The distribution of the bacilli has been carefully noted by many observers. The occurrence in clumps and the parallel arrangement of many, or even two bacilli, is said to evidence a favorable state of development and lively growth. Groups of short bacilli are held by some to betoken a bad prognosis.

The clumping of beaded forms, Brieger[4] believes, shows destruction of lung tissue. Clumping occurred in 69 per cent. of the cases apparently cured, in 78 per cent. of those arrested, in 80 per cent. of those improved and in 82 per cent. of the cases that failed, showing that there is a slightly greater tendency to clumping in the less favorable cases. It is difficult to say much in regard to the individual clumps, and from

my notes it would seem that clumps composed of bacilli lying close one to another form about the same percentage of clumps in all cases. Clumps of loosely distributed bacilli occurred more frequently in the cases that failed. Bacilli occurred diffusely scattered in practically all specimens.

Chains of three or more bacilli and pairs of bacilli with their long axes parallel gave no data for prognosis.

It is interesting to compare these results with some obtained in the laboratory. Theobald Smith[7] describes the bovine tubercle bacillus, which some hold to be of low virulence for man, as short and straight. In another place he describes a tubercle bacillus of low virulence obtained from an abdominal abscess as occurring in clumps of ten or more and quite slender, with the chromatin substance more or less transversely segmented.

A tubercle bacillus which has been grown for ten years by Dr. Trudeau showed in old growth a predominance of long, beaded forms with knobs and irregularities. Some were short. In the younger growths short and medium forms occurred which were less beaded. This tubercle bacillus is of very low virulence and injected subcutaneously into a guinea-pig kills only after eigtheen months.

A virulent tubercle bacillus obtained by Dr. Baldwin from an acute case a short time before the observation was made, showed in old cultures chiefly long and beaded forms with a few short and medium-sized bacilli. From new cultures many short forms were obtained, but some were long and showed slightly swollen extremities.

From this it is seen that virulent and attenuated forms of tubercle bacilli possess practically the same morphology and that short bacilli represent usually a younger growth.

In conclusion it may be said:

1. That the examination of one specimen of sputum is of value if tubercle bacilli are found in proving the case one of tuberculosis of the respiratory tract.

2. That if no tubercle bacilli are found one examination is of little value. At least four or five specimens should be examined after the patient is directed how to collect the sputum.

3. That from one specimen little or nothing can be said in regard to prognosis.

4. That if the number of bacilli steadily decrease in a series of examinations at intervals sufficiently long, the patient may be improving, but the constitutional symptoms and local signs give much more accurate information.

5. That if on repeated examinations large quantities of tubercle bacilli are found, the disease has in all probability advanced to cavitation.

6. That the morphology of the tubercle bacilli affords little or no ground for prognosis, but the short bacilli are suggestive of a more active process.

7. That the arrangement of the bacilli in clumps is more apt to be found in the severer cases, but may occur in all.

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Clinical Report.

INCISED WOUND OF WRIST,

RESULTING IN PARTIAL DIVISION OF MEDIAN NERVE AND COMPLETE DIVISION OF NEARLY ALL OF FLEXOR TENDONS OF RIGHT HAND.

W. P. VERITY, M.D., AND R. L. LARSEN, PH.D. M.D.
CHICAGO.

The following case is of great interest, from many points of view, especially on account of the circumstances surrounding the etiology, course, treatment and results obtained. The case is one which, in many instances, has often called for repeated and drastic efforts in restoring the pathologic conditions to the normal. The short space of time involved, in which a doubtful result has turned out to be a surprisingly perfect one, is worthy of note.

A boy, Albert P., aged 10 years, resident of this city, came to Dr. Verity's office, June 22, 1901, and showed his injured member. He was accompanied by his mother, who was very anxious to know what could be done to relieve the boy of the inevitable and permanent deformity, which would certainly result if no medical or surgical influence were soon brought to bear.

The parent stated that seven or eight weeks previous to this first visit the boy, while playing in a vacant lot, where there was an abundance of rubbish, stumbled and fell, and in trying to catch himself put out his right arm, his hand striking on some loose pieces of glass lying on the ground, one large piece of glass cutting through the palm of his right hand, at about the bases of the metacarpal bones of the second and third fingers.

The superficial wound in the hand healed, but it left behind it the damage, which forms the center of interest in this paper. No distressing symptom was ever present, as pain, only the discomfort occasioned by the inability to flex the fingers. The wound was considered of a trivial nature and no physician was called.

On examination the following conditions were present: Index and middle fingers could not be flexed, but remained perfectly extended, and ring finger likewise also was affected, only to a less degree. Thumb and little finger retained normal motility. Normal flexion and extension at wrist joint, supination and pronation. No loss of sensation in any of the digits or palm of the hand, a singular fact to note. The laceration in the palm was about ¾ to ⅞ of an inch in length.

Palpation in the region of lower third of forearm and wrist-joint revealed two or three distinctly nodular bodies, which at some points felt sharp, leading to the belief that there were some pieces of glass or other foreign matter present and imbedded in the soft parts. To make certain of these conditions a fluoroscopic and an ordinary *x*-ray picture were taken. The results were negative. These nodules were therefore considered to be the bulbous ends of the severed tendons.

An exploratory operation was advised and consented to. The boy entered St. Joseph's Hospital June 28. Chloroform was the anesthetic used. Median incision, extending from a point at about junction of lower and middle thirds of forearm to a line passing transversely through web of thumb, was made, skin and superficial fascia dissected back, and the following picture presented to view: all the tendons of the flexor sublimis digitorum were completely divided, the cut ends being separated for the distance of nearly three inches. All the tendons of the flexor profundus digitorum, tendons to the index, middle, and ring fingers, were completely severed, with separation in distances ranging from two to four finger-breadths. The central ends of the deep flexor tendons were held down by fibrous bands, each of about an inch and a half in length. These ends, together with central ends of the superficial group, showed nodular swellings, which were irregular in outline, and which, before the operation, puzzled us as to their exact nature. The flexor tendons to the thumb were intact. The only tendon of the long group to the little finger left entire was that of the flexor profundus digitorum.

The conditions were so favorable regarding the patient's disposition that we decided to convert the exploratory operation into a radical one, inasmuch as we had proceeded so far.

Among all this mess of cords was found the median nerve, very nearly severed, the laceration extending transversely through the nerve toward its posterior aspect, leaving but a strip of the nerve-sheath and probably a few fibers. There was a gap of about an inch, with no sign of bulbous swelling, yet covered over by a layer of fibrous elements. The sheath of the nerve was slit and sutured after careful approximation of cut edges. The laceration of the nerve was at a point near where the trunk divides into its separate individual branches, that is, central to such division. This nerve caused some confusion for a time, and even my colleagues, E. J. Senn, C. Wagner and J. Printy, who were present, guessed as to its identity. It was of remarkably large size, like one of the tendons, and for a long time was taken as one. To remove all doubt, the first incision was continued up the arm for a distance of two inches.

Fig. 1.—Appearance of field of operation before surgical repair commenced. The large arteries are not shown, for they were drawn to one side. (*a*) Deep flexor tendons (central ends). (*b*) Bands of connective tissue at ends of tendons. (*c*) Long flexor of thumb. (*d*) Lacerated portion of median nerve. (*e*) Superficial flexor tendons (central ends). (*f*) Loose connective tissue over pronator quadratus. (*g*) Retracted distal ends of superficial and deep flexor tendons (pulled up). (*h*) Line showing position of receipt of injury. (*i*) Actual position of retracted distal ends of flexor tendons (under skin).

The position and relations then observed established its anatomic identity. The next step was the suturing of the severed tendons in such a way that practical use could be had of the fingers affected. It was indeed very remarkable that there should be so much contracture of the parts involved in the lesion, so soon after the injury.

The modus operandi in suturing together the muscular elements was instituted as follows: The distal end of the deep flexor tendon to the index finger was pulled up out of its position and sutured into the long flexor tendon of the thumb (a slit being made in the tendon of the latter) at a point opposite the upper end of the groove below the thenar eminence, as far as the tendon could be drawn, the hand and all of the fingers being flexed as much as possible.

The distal ends of the deep flexor tendons of the middle and ring fingers were drawn up and sutured into the deep flexor tendon of the little finger (a slit being made in the tendon of the latter). The proximal ends of the deep flexor tendons were left in position, in which they were held by fibrous bands.

Now, the proximal ends of the group of tendons of the flexor sublimus digitorum were drawn down and sutured to the distal ends of the corresponding tendons, a few stitches including the upper margin of the ulnar portion of the divided palmar fascia. This latter fastening stood out very prominently, like a bridge, although the hand was flexed to its limit.

It was intended at first to splice the muscle above, in order to afford better and clearer approximation of the severed tendons, but it was held impracticable under the circumstances, the limit of physiologic stretching being at a minimum.

Both my colleagues and myself thought of other methods of tendon suture, such as Czerny, split tendon, Anderson's method, kangaroo tendon and bridgework of stout catgut sutures, but because of the great degree of separation of the tendon ends, it was considered best to abandon these methods.

After all these structures were secured and placed in position the contiguous edges of the palmar fascia were firmly

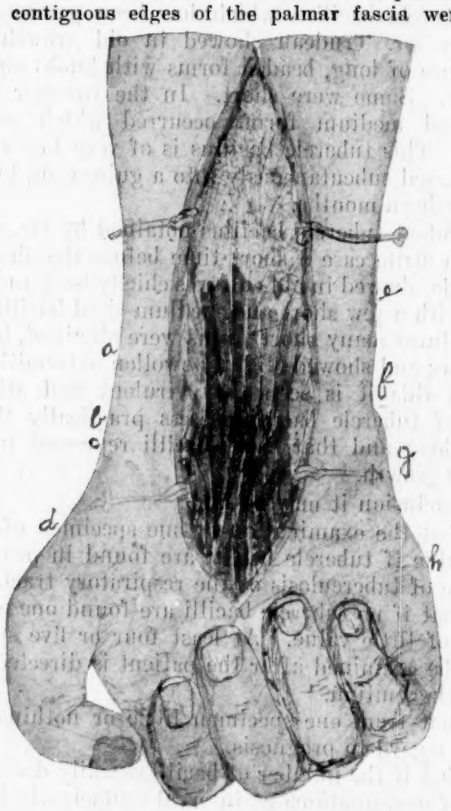

Fig. 2.—Appearance of field of operation after surgical repair was instituted. The large arteries are not shown, for they were drawn to one side. (*a*) Central ends of deep flexor tendons. (*b*) Flexor longus pollicis. (*c*) Median nerve repaired. (*d*) Distal end of deep flexos tendon to index finger. (*e*) Superficial flexor tendons. (*f*) Deep flexor tendon to little finger. (*g*) Distal ends of deep flexor tendons to ring and little fingers respectively. (*h*) Palmar fascia to which superficial tendons were sutured.

brought together and sutured. Then the separated edges of the superficial fascia and skin were approximated and stout anchoring catgut sutures inserted at regular intervals, more of them being employed in the region of the angle formed by the flexion of the hand on the forearm, and then a continuous horse-hair suture of the skin from end to end of the incision.

Little hemorrhage was encountered. Over the wrist-joint, at about the lower ends of the ulna and radius, buttonholes were made in reflected skin and gauze drains inserted. Antiseptic dressings were applied with the forearm fixed at right angles to the arm and against the body. A plaster-of-paris splint was applied from the axilla nearly down to the tips of the fingers. The fingers were snugly flexed on a small roller bandage.

The accompanying illustrations will show the picture of the open field of operation before and after suturing of the tendons and repair of the median nerve. (Figs. 1 and 2.)

Thirteen days after the operation dressings were removed for inspection; there was no swelling or discoloration. The wound had healed by primary intention. Sensation and nutrition in the fingers and hand were normal. At no time after the operation did the boy have any abnormal temperature, or cardiac disturbance. Fifteen days after the operation the boy was taken home and further examination made at convenient intervals.

After the first five weeks had passed we instituted massage, passive and active motion. After the second week, and thereafter, active motion of the fingers affected, elicited steady, slow and gradual improvement of flexion.

September 3 photographs were taken of the parts involved in this case. Three positions are represented, showing (Fig. 3) the relations of the fingers to one another, giving a view of the scar, indicating the line of incision employed in the operation, and the bulging at the wrist due to the tension of the flexor tendons. Figure 4 shows the relations of the hand, wrist, forearm and arm, as secured by means of the plaster-of-paris splint. Figure 5 shows the extremity elevated and the anterior surface exposed.

Figure 3.

For a few weeks at this period there was a good deal of stiffness around the wrist-joint and hand, but this gradually diminished under vigorous treatment with massage, baths and electricity. After the third month the boy was given daily exercise in the way of carrying weights, such as a bucket of water, which he faithfully performed.

At about the middle of October the hand could be fully extended and the fingers nearly so. He had the ability to double up his fist. There was, of course, a well-marked and long cicatrix along the middle of the anterior surface of the forearm and wrist, but by massage we restored the cutaneous portion to as near a perfect condition as could be gained.

Dec. 20, 1901, nearly full extension of fingers was observed. There was complete flexion of fingers. He can not flex the thumb or little finger without causing flexion of the index, middle and ring fingers, thus demonstrating the results of suturing of tendons, as instituted at the time of operation.

The boy has suffered no pain at any time, the only reminiscence of any severe condition to the member at present is the long cicatrix and vicarious movements of the fingers. Now he uses (at the time of this writing) both hands alike in his manual work, no difficulty being shown even when attempting

Figure 4.

to write, or play on the piano. Each finger can be voluntarily put into action, no stiffness being perceptible.

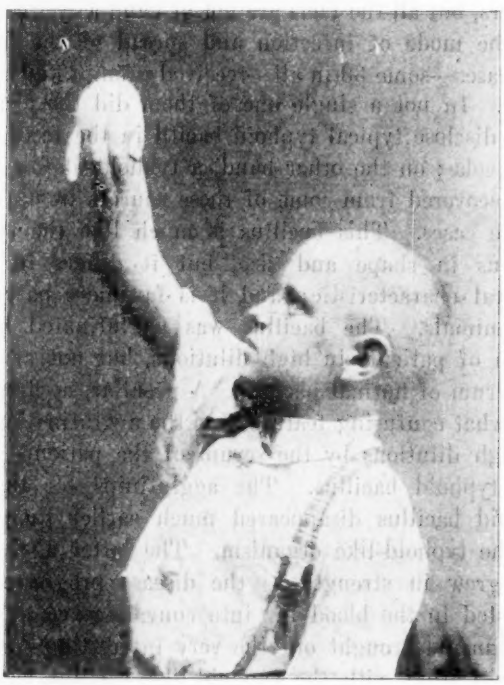

Figure 5.

Thus is shown the necessity of early tendon suture, with slow and careful inspection and operative progression.

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AN EPIDEMIC OF TYPHOID-LIKE DISEASE.

The application of bacteriologic methods to the routine clinical study of typhoid fever led to the demonstration of cases of typhoid-like diseases, or paratyphoid, associated with bacilli that differ from the typical typhoid bacillus in essential biologic characteristics yet clearly belong in the same general group. These bacilli are called paratyphoid or paracolon bacilli. The number of isolated cases of paratyphoid has increased rapidly. Wherever modern bacteriologic methods have been used in the examination of typhoid fever, cases of paratyphoid have been disclosed sooner or later. Judging from current reports in medical journals and before medical societies paratyphoid would seem to be coextensive with typhoid fever. Wherever the latter occurs in endemic form occasional cases of the former may be confidently regarded as demonstrable sooner or later if examinations for that purpose are instituted.

It is most interesting, however, to learn that recently epidemic paratyphoid has been recognized in which all of the cases have been shown to be caused by paratyphoid organisms. The reports of such an epidemic come from Germany.[1] The disease developed in a regiment of soldiers, but all the facts are not at hand as yet concerning the mode of infection and spread of the disease. The cases—some 38 in all—received prompt and careful study. In not a single one of them did the examinations disclose typical typhoid bacilli in the feces, urine or roseolæ; on the other hand, a typhoid-like organism was recovered from some of these sources in nearly all of the cases. This bacillus is much like the typhoid bacillus in shape and size, but it differs in many cultural characteristics, and it is far more pathogenic for animals. The bacillus was agglutinated by the serum of patients in high dilutions, but not at all by the serum of normal persons. A peculiar, at first sight somewhat confusing feature, was the agglutination even in high dilutions by the serum of the patients of the true typhoid bacillus. The agglutinins for the true typhoid bacillus disappeared much earlier than those for the typhoid-like organism. The latter agglutinins also grew in strength as the disease progressed and persisted in the blood far into convalescence. Animal experiments brought out the very interesting fact that immunization with the typhoid-like bacillus gave rise to agglutinins for both these bacilli; here again the agglutination of the typhoid-like organism was the stronger. For the reason that a duplex agglutinative property was produced by the injection of the typhoid-like bacillus the authors feel that there was no absolute necessity for assuming the existence in these cases of a mixed infection. It would have been of great interest to have the results of systematic blood cultures in an endemic like this. Apparently the authors were satisfied with the demonstration of the peculiar organisms in the roseolæ of a certain number of cases. It is not at all unlikely from what we now know in regard to typhoid bacillemia that in this series a bacillemia also existed, and the demonstration of the bacilli in the blood of a number of cases would have strengthened materially the etiologic relationship of the organism.

This being the first epidemic of typhoid-like disease recognized as such the practitioner naturally will be interested in the clinical features. In the main the clinical picture was that of typhoid fever, but certain peculiarities were noted. In many cases the beginning of the disease was rather abrupt and the termination equally sudden. The fever was not very high as a rule and of rather short duration. On the whole the symptoms were not severe. There were no fatal cases.

The authors suggest the propriety of designating the diseases caused by bacilli related to but not identical with the typhoid bacillus as "typhoid" diseases. This usage of the word "typhoid" is, of course, not at all objectionable from the purely German standpoint, but it is sure eventually to cause confusion among English-speaking physicians. We would urge on our German confrères the advisability of abandoning at once the use of the word "typhoid" in the sense suggested and to substitute the word paratyphoid (in German "paratyphus"). This would not cause any confusion in the minds of English readers of German articles and books. Finally, it is proper to say that this study of a paratyphoid endemic will serve to emphasize the importance of the paratyphoid infections and it also indicates that with time as observations multiply it is probable that certain clinical peculiarities of paratyphoid will be established.

1. Hünermann: Zeitschr. f. Hyg. u. Infektionskr., 1902, xl, 522-528. Conradi, Drigalski, and Jürgens: Ibid., xlii, 141-174.

THE SIGNIFICANCE OF LEUCOCYTOSIS IN SURGICAL DIAGNOSIS.

Surgeons have lately been devoting considerable attention to the diagnostic value of the white blood count, specially in acute abdominal conditions, and with very contradictory results, as shown by their conclusions. Some have expressed the belief that leucocytosis as an aid to the surgeon in diagnosis is far from having positive value; that the facts are too much at variance and too contradictory to be relied on; and that, as at present developed in the hands of the average surgeon if constantly acted on, do great harm. Others believe that there is considerable diagnostic value in the leucocyte count in doubtful cases and always have an estimation made in such cases.

Kühn[1] of Rostock University, in a paper on the diagnostic value of leucocytosis, gives tabulated results of his estimations in a series of operative cases, and concludes that the leucocyte count is a diagnostic aid of great importance, with special value in acute suppurative processes. Positive results were obtained only in cases in which pus was in the process of developing; with localization and abscess formation the leucocytosis usually gradually disappears. Only high counts have special value, the lower counts giving very little information. In chronic suppurative processes leucocytosis may be entirely absent.

These opinions are, we believe, in accord with the expressions of those who have had most experience in the study of the blood in acute abdominal conditions. Many criticisms have come from those who have not had personal experience in the study of the blood and whose criticisms for this reason have been in some degree unjust and possibly have had a harmful tendency. It should be recognized with the leucocyte count as with other clinical methods that it is but one of many aids in reaching a diagnosis, and when carefully made and correctly interpreted it may be of considerable value. We can not determine the exact condition of the kidneys or bladder by examination of the urine; neither is it usually possible to determine the exact condition of intrathoracic organs by physical examination of the chest, but by using these methods we often obtain most valuable information. The condition of the pulse and temperature gives another example of this kind. We presume there are few surgeons at the present time who neglect to take the temperature of their patients at frequent intervals in acute cases, yet every surgeon recognizes that in many acute intra-abdominal inflammatory conditions there may be only a moderate elevation of temperature, and in brain abscess there is frequently a subnormal temperature, yet all surgeons recognize that, as a rule, elevation of temperature is an important sign of inflammation. While the clinical thermometer is not a positively reliable guide to the patient's condition, no one would justify neglect of its use.

In the same way the leucocyte count alone, while not giving positive indication to operate or not to operate, is of too much value in determining the condition of the patient to be neglected. The criticisms of those unfamiliar with such modern clinical methods are less likely to do serious harm than some champions of clinical laboratory methods seem inclined to believe, for comparatively few older practitioners have been trained in such methods or are likely to take them up, while the younger generation who have such training appreciate the value of new methods as well as their limitations and will scarcely be likely to be influenced by opinions which conflict with their own experience and that of competent authorities. Those who depreciate the value of modern scientific methods not only tend to hinder progress, but also put themselves in a bad light in the eyes of those who have studied modern methods and appreciate them.

1. Münch. Med. Wochenschr., 1902, vol. xlix, p. 2033.

THE DECREASING BIRTH-RATE SCARE.

The alleged decrease in the birth rate of the American-born population in this country is the subject of a recent article in one of our contemporaries.[1] It seems to suggest that we shall soon be following the same course toward natural extinction that had been alarming France. The subject has excited considerable popular attention, and a previous utterance on the subject from the chief magistrate of our country has been brought into prominence. This is a subject which has been mentioned, not once but frequently, in past numbers of THE JOURNAL. It is not the United States alone, but many other civilized countries that give evidence of declining birth rates.

The facts, however, as to our own country are too deficient to enable us to lay down a rule, or to say that the condition is one that need excite natural alarm. The registration district in this country is comparatively small and includes only a few of our older states where, from emigration and other circumstances, the birth rate might naturally be expected to be on the decline. In most of the country the returns of births are absolutely unreliable, and any jeremiads on the subject will lack grounds to make them actual indications of the true condition of things. Even in the New England states, where the decline is alleged to have been greatest, there has, in the last decade, been a slight increase. The fact is that a falling birth rate is a natural index of moderate prosperity and thrift. It is only when it falls beyond a certain point that it becomes actually threatening. It is a biologic fact that high living and over-nutrition diminish reproductiveness, and we notice this in the human species as well as in the lower animals, but in man reproductiveness is still further affected by economic and social conditions. The decrease is relative, not actual, for even in France the birth rate exceeds the death rate.

We still have in this country a very extensive proletariat and as population becomes more dense and the conditions of life harder it will increase. The probabilities are that within the next hundred years the increase of the birth rate among the poor will be more alarming than its decrease among the well-to-do. It is none the less advisable to check the evil, however, so far as we see it exists. It would be a good thing if the best American stock would keep up its numbers. We trust it will, and we do not believe that there is any reliable evidence that it is not now doing so. The descendants of the Puritans have spread themselves over the whole territory of the United States and have leavened the rest of the population. Like the Norman blood in England, the Puritan stock will never die out, though the aristocracy, so to speak, may constantly require accessions from below.

1. N. Y. Med. Record, Jan. 31.

CHAUVINISM IN MEDICINE.

A bill before the Michigan legislature proposes to make Canadian physicians who wish to register and who do not possess American qualifications take one year of study in the Michigan medical schools. Canada has a similar practice; in some of the provinces no one not possessing Canadian or British qualifications can register without taking a course in one of the provincial schools. We have already commented on this fact in connection with Dr. Osler's lecture on Chauvinism in medicine, as a brilliant illustration of what he was warning against, in the very community in which he spoke. We can not say that we entirely like this sort of retaliatory reciprocity, and should regret to see Michigan adopt the Canadian policy. Let the Canadian applicant for practice go through a thorough examination, let him bring evidence of character and standing, but, if these are satisfactory, it is entirely superfluous to make him go through a local school for the sake of fees or to discourage his incoming. We need not be narrow because others are.

THE DIPLOMA VS. EXAMINATION.

Under the general system of medical examinations as a prerequisite to the granting of license to practice medicine it is inevitable that the few states that still require only a diploma will be the dumping-ground for incompetents and quacks. A diploma means only that its holder has satisfied the faculty of his college, that he has passed its requirements, and this does not by any means always imply that he is fitted to take charge of the lives and health of the public. Moreover, there are diplomas and diplomas, and there is no absolute surety of their value except in a very discriminating and limited list of recognized institutions. The acceptance of a mere diploma is, in fact, a surrender of the right of the state to fully protect its citizens. It is for these reasons that we regret to see that in the amended law now before the Colorado legislature this feature is retained and examination only required for non-graduates or those from unrecognized institutions. We can not say what were all the circumstances that induced its retention, but it is regrettable that it was thought advisable. The quality of the medical profession in Colorado will not be improved by lax requirements of professional qualifications. There are now hardly more than half a dozen states and territories that admit to practice on diplomas. It will be unfortunate for Colorado if it is to remain among them.

PHYSICIANS' AND LAWYERS' INCOMES IN BERLIN.

Medical practice in Berlin apparently does not pay so well as the profession of law, according to the *Berliner Lokal-Anzeiger* of January 29. In it an interesting comparison of the income of physicians and lawyers is made, greatly to the disadvantage of the former. In the district there were last year 3,639 physicians as against 3,458 in the preceding and 3,376 in 1900. In 144, 3.95 per cent., there was absolutely no income whatever. In 977, or 26.85 per cent., there was a total income of $225 to $750; 640, or 17.56 per cent., had from $750 to $1,250; 1,033, or 17.8 per cent., had from $1,250 to $2,625; 649, or 17.8 per cent., had from $2,625 to $12,500, and 49, or 1.4 per cent., had from $12,500 to $55,000 income. It would seem, therefore, that nearly one-half of the Berlin physicians, or more particularly, about 44 per cent., had an income of $1,200 or less. According to the figures for legal practice furnished by authorities, which, on the other hand, only included the net income, 10 per cent. of the lawyers received under $750; 12 per cent. had from $750 to $1,250; 50 per cent. from $1,250 to $2,500; 12 per cent. from $2,500 to $3,750; 8 per cent. from $3,750 to $5,000, and 8 per cent. over $5,000. There are, therefore, just twice as many physicians as lawyers with an income of $3,000 or less, and yet the medical profession increases in numbers. There must be something in scientific medicine that is attractive to the ingenuous youthful mind, altogether aside from mercenary considerations.

FOOLISH LEGISLATION.

There seems to be a tendency on the part of some state legislators to propose very unjust and ridiculous laws, some of which have a medical bearing. Among them are the anti-kissing laws which have been introduced in several state legislatures within the last two or three years, and such acts as the Wemple bill, now before the New York legislature. The latter is, we think, only a repetition of what was proposed one or two years ago to prevent any operation on a female except in the presence of a near friend. The author of this bill, as the *New York Tribune* says, possesses a singular lack of familiarity with the requisites of success in difficult surgery. Still another that perhaps might be placed in this class is the so-called "health day" proposition in the Utah legislature, which, it is said, is proposed to be also introduced in Illinois. This provides that on a certain day of the year general house cleaning and disinfection shall be practiced, and that it shall be a misdemeanor to fail to clean up. This would turn everybody out of doors for the time being. We might reproduce the Jewish feast of the tabernacles and go into camps. Speaking seriously, however desirable a general house cleaning might be, such a law as this would be almost impossible to enforce and would cause serious inconvenience, and in most communities, we think, would soon pass into "innocuous desuetude." It would require inspection to enforce the law, and this could be better done with a wider range of action; a good sanitary inspection with power to enforce orders, which is perfectly practicable, would be all that is required and far better than the naming of a special day for universal house cleaning and general tearing up of things. We can, therefore, class this among the fake legislations, or at least among the ill-judged propositions that we trust will not be made laws. However good the idea the difficulties would defeat its usefulness.

THE CALIFORNIA PLAGUE SITUATION.

The plague situation in California appears to be clearing up. The new governor is not following in the footsteps of his predecessor, but, as was to be expected from his antecedents, is in favor of active measures, rather than the ostrich policy of denial, to secure to the state a clean bill of health. As one evidence of

this he has withdrawn his predecessor's nominees for the State Board of Health, and it is to be hoped that he will so thoroughly reorganize that body that it may command the confidence of the people. The commercial organizations of San Francisco have also spoken, demanding coöperation of the health boards of the city and state with the Marine Hospital authorities in the stamping out of the infection, and pledge their support to the work. Until very recently, however, the mayor of San Francisco had not publicly changed his attitude of denial of the existence of plague in that city, although he had privately admitted it. He has, however, by force of circumstances, had to learn the lesson that in this, as in other matters, "honesty is the best policy," and we need not anticipate any active opposition from that quarter when the national and state authorities have fairly taken the matter in hand. The risk of a serious outbreak of plague among the San Francisco Chinese, which has been an impending possibility for the last three years, will now be appreciably lessened with a state health board working in harmony with the federal health authorities. The whole history of the California plague is a moral lesson of the impolicy of allowing an unprincipled commercialism to override scientific facts in sanitation. The plague of misrepresentation which has been infecting San Francisco was worse than the bubonic plague, and some of the San Francisco press have hardly yet sufficiently recovered from its effects.

THE ETIOLOGY OF CANCER.

Notwithstanding all the work done in cancer etiology, one of the best European authorities, Professor Lubarsch of Posen, in Germany, a man who is thoroughly familiar with the whole subject and who has evidently spared no pains to get at all the recent publications, gives it as his conclusive opinion that we are as yet not in a position to say anything definite of the cause of malignant disease. He says[1] that while it is clear that all forms of malignant neoplasms resemble each other so much as to make it sure that if one is due to parasite the others are also, we have as yet no sure evidence that a parasite is the actual causative agent. On the other hand, Professor Lubarsch considers that there are groups of true neoplasms histologically different from carcinomata which yet share with them the destructive properties of giving metastases and causing cachexia, with regard to which, however, a parasitic cause is out of the question. Even in the epithelial group of the carcinomata there are many special classes of tumors whose peculiarities would be very difficult to explain on this score. He adds that even if the etiologic rôle of parasites in the causation of a malignant disease is to be accepted, there are other causes that must be considered to have at least equal value. Chronic irritation seems, for instance, especially for many epithelial carcinomata, to be an almost indispensable predisposing condition. Without the preparation of soil, developed by frequently repeated irritation, the epitheliomata fail to make their appearance. The presence of embryonal or postembryonal cellular material included in certain parts of the tissue, with a special tendency to take on an excessive formative disposition, seems to be another predisposing cause without which many neoplasms would not develop. In any theory of cancer etiology, then, these conditions and their effects will have to be taken into account quite as well as any supposed influence of parasites. As a matter of fact, it is not definitely settled yet whether cancer may not be originally a lack of vitality in the connective tissue rather than a surplus of vitality in the parenchymatous tissues. The normal state of the cellular tissues consists of an equilibrium of cellular forces so established that the constituents of the supporting tissues and the more specialized cells of the various organs have just enough resistive vitality to keep from interfering with the growth of one another, or, on the other hand, of permitting overgrowth on the part of their neighbors. Weigert and Roux have insisted that neoplastic formation is usually due, not to an acquired *nisus formativus*—a special new tendency to overgrowth—but to the disappearance of the resistive factors which have hitherto controlled the normal *nisus formativus* always present. A certain amount of neoformative power must always exist in order to keep any organ up to the standard necessary for function, and it is the failure of the connective tissue properly to limit this force that constitutes, under some circumstances, at least, the essence of malignancy. Once cells have acquired the habit of overgrowth, like microbes, they are prone to take on special virulence, and hence the occurrence of metastases and the development of cachexia because of the oversecretion of toxic cellular products.

1. Pathologische Anatomie und Krebsforschung. Bergmann, Wiesbaden, 1902.

Medical News.

CALIFORNIA.

Personal.—Dr. Leonard Stocking has been elected medical superintendent of the Agnew State Hospital; Dr. George D. Marvin has been promoted to be first assistant physician, and Dr. Edwin A. Kelley, Berkeley, has been appointed to take charge of the male department of the institution.——Dr. Titian J. Coffey, Los Angeles, is taking a course of special study in the East, and will visit Europe.

New Hospitals.—Sonoma County is to have a new county hospital at Santa Rosa, to cost $40,000.——The new Emergency Hospital on Crocker street, Los Angeles, was formally opened January 26.——A free polyclinic was opened at San Francisco, January 22, under the patronage of the Emanuel Sisterhood.——Plans are being matured for a $100,000 Methodist Hospital at Los Angeles.——Sequoia Hospital has been incorporated by five physicians of Eureka, with a capitalization of $50,000.

Proposed Medical Laws.—A bill has been introduced in the Senate for the regulation of the practice of medicine and surgery in the State of California and for the appointment of a board of medical examiners in the matter of said regulation. It is provided that the board shall consist of nine members, to be appointed by the governor, as follows: Three members from the State Medical Society, three members from the State Homeopathic Medical Society, and three members from the State Eclectic Medical Society. A bill of similar import was introduced in the House by Representative G. S. Walker, and Representative McMartin of San Francisco is fathering a measure which provides that each school of medicine may issue licenses to practice to its own graduates. Against the passage of the latter bill the Santa Clara County Medical Society has entered an energetic protest, for the following reasons:

That in matters of education it is retrogressive, inasmuch as the present medical law requires a fair knowledge of the fundamental principles of medicine, surgery and obstetrics, while the proposed law seeks to eliminate this requirement by abolishing examinations

which now exclude from practice the unlearned and incompetent graduates of mercenary and notoriously disreputable medical colleges.

That under the existing statutes of California any body of men can incorporate a medical college and lawfully confer degrees and issue diplomas. Should assembly bill No. 129 become a law it will encourage the establishment of new diploma mills under the guise of medical colleges, whose output would receive certificates from a state board to practice medicine on presentation of such diplomas, and overrun the state, becoming a curse to the communities in which they may locate and a source of degradation to the medical profession.

That the bill encourages the incorporation of unscrupulous persons into various "legally chartered medical societies," which by their numerical strength as opposed to bona fide state medical societies can compel the governor to appoint members of the State Board of Medical Examiners of their own selection and for their own private interests, thus taking the election of members of the state board out of the province of the three state medical societies.

That the bill discriminates against graduates of colleges and universities of other states by compelling them to submit to an examination by the State Board of Medical Examiners and payment of a fee of $25, while graduates of medical colleges of California are made exempt from such examination of qualification and are admitted to practice on the payment of a fee of only $10.

DISTRICT OF COLUMBIA.

Personal.—Surgeon-General Presley M. Rixey gave an address in Jefferson Medical College, Philadelphia, February 3, under the auspices of the H. A. Hare Medical Society, on the opportunities of medical men in the Navy. A reception and banquet in his honor followed.

Health of the District.—During the week ended February 7 122 deaths occurred, 73 were white and 49 colored individuals. One hundred and seven births were reported, of which 69 were white and 38 colored. During the week there were under treatment 130 cases of typhoid fever, 11 of scarlet fever and 5 of diphtheria and 8 of smallpox.

Typhoid Fever Statistics.—The records of the health office from July 1 to Dec. 31, 1902, show that 1,290 cases of typhoid fever were reported, with 156 deaths. In 25 cases no personal history was obtainable; 154 cases are believed to have been contracted outside of the district; 93 by direct exposure to other cases, and 21 through infected milk; while in 997 cases the only cause associated was the drinking water. The Potomac water was supposed to have been used in 729 patients, and in 103 cases Potomac and other waters were used. Well water was said to have been used exclusively by 99 patients, spring by 28, spring and well water by 31 and melted ice by 7.

ILLINOIS.

Scarlatina at Lake Forest.—Lake Forest is to be a closed town as regards church and other public gathering places, for three weeks, on account of the prevalence of scarlet fever.

The Governor's Message.—In his message to the legislature, Governor Yates recommends the formation of a State Board of Medical Examiners, and an increase in the appropriation for the State Board of Health.

The Sale of Cocain.—The January grand jury of Cook County in its report noted the alarming growth in the sale of cocain and recommended that every step possible under the law be taken to confine its sale within legitimate bounds.

No More Fees at County Hospital.—The warden of Cook County Hospital has decided that the only fee heretofore permitted to be collected at the hospital, namely, that for filling out proofs of death for life insurance companies, shall be abolished.

Honor Dr. Catlin.—The Winnebago County Medical Society honored one of its oldest members, Dr. Edward P. Catlin, Rockford, at a banquet given in his honor, February 10. Dr. William H. Fitch presided and extended the greetings of the society to its honored guest.

State Care of Consumptives.—In his message the governor recommended the construction of a state sanatorium for consumptives for the following reasons cited in its report by the State Board of Health:

1. Tuberculosis, an infectious disease, is the cause of one-seventh of all deaths, and that its widespread prevalence, especially among the poor who are unable to procure proper treatment, has been, and continues to be, a decided menace to the public health. 2. It is estimated that over 8,500 persons die annually in Illinois from tuberculosis. 3. Tuberculosis is a preventable disease; and while there is no infectious disease which causes such disaster in the human family, there is none which is more easily prevented. 4. Tuberculosis is a curable disease, especially in its earlier stages. 5. Patients suffering from tuberculosis, especially those of the poorer classes, can not be properly cared for at their homes; general hospitals are ill adapted for the treatment of consumptives, and, since tuberculosis has been recognized as a communicable disease, the doors of nearly all hospitals, public and private, have been closed to consumptives. 6. An improperly cared for consumptive daily jeopardizes the health of the community in which he lives. 7. The state, for both humanitarian and economical reasons, should care for the consumptive, and should prevent him from endangering the lives of those about him. 8. The successful treatment of tuberculosis requires the segregation, in properly constructed hospitals, of those patients who can not receive the needful care at home; the value of sanatorium treatment as a center of education, a means of prevention, and as a method of cure, has been successfully demonstrated at home and abroad. 9. The importance of a special climate, altitude or atmosphere in the treatment of consumptives has been exaggerated; the treatment and cure of pulmonary tuberculosis is as feasible in the State of Illinois as in any state of the Union, and cures effected in the ordinary home climate, in which the patient must remain, are more lasting and more assured than cures obtained in other climates apparently more favorable.

Chicago.

Deaths of the Week.—The total 638 deaths from all causes reported during the week increases the mortality rate 6.5 per cent. over that of the previous week and 12.3 per cent. over that of the corresponding week of 1902. The rate for the week was at the annual rate per 1,000 of 17.56, an unusually high rate for Chicago. Pneumonia, Bright's disease, heart diseases and the chronic maladies generally contribute to the excess of deaths, and the privations and sufferings caused by the coal shortage are especially reflected in the excessive death rates among the young and the aged.

Children's Hospital Society.—Despite the storm the meeting of this society on Sunday was well attended. Drs. Billings, Abt, Henrotin, Engelmann, Christopher and others explained the objects of the organization. Dr. Fernand Henrotin was appointed chairman of the advisory committee, and Dr. Isaac A. Abt chairman of the medical and visiting committee. Instead of building a separate hospital it was decided to create an endowment fund to enlarge and improve the hospital facilities already existing for the care of sick children and to coordinate the various philanthropic interests involved.

MARYLAND.

Baltimore.

Vital Statistics.—Measles is on the decrease, only 141 new cases being reported last week. 215 deaths were reported, a rate per 1,000 of 20.60. Pneumonia led in the causes of death with 43. There were 20 deaths from consumption, 7 from grip, and 3 from measles.

Personal.—Dr. Alexand. H. Saxton has been elected physician to St. Mary's Industrial School, to succeed the late Dr. R. H. Goldsmith.——Dr. Simon Flexner will resign his chair in the University of Pennsylvania to assume charge of the new Rockefeller Research Laboratory about to be erected in New York.

The Ginger Blindness Case.—The "Jamaica Ginger Case," which was tried in the Superior Court, resulted in a disagreement of the jury after a trial of 14 days. The jury stood 9 for Dr. Brehm, the blind plaintiff, and 3 for the drug firm. Four other cases are pending, 3 for blindness and 1 for death, alleged to have resulted from drinking essence of Jamaica ginger containing wood alcohol.

New Physiologic Laboratory.—Owing to the unusual size of the first-year class at the Johns Hopkins Medical School, which numbers this year 100 students, a new laboratory on the first floor of the physiologic building has been completed for the course in physiological chemistry, under Dr. Walter C. Jones, associate professor of physiological chemistry and toxicology. It accommodates 32 students and is provided with the most approved apparatus and conveniences.

The Alumni Awake.—There is a great awakening at the University of Maryland and, with the formation of a general alumni association, a strenuous effort will be made at reorganization and endowment. A fund is being collected among the alumni of the medical school, to be known as the "Centennial Endowment Fund," and, as the medical school will celebrate its centennial in 1907, an appeal is being made to all the medical alumni throughout the country in behalf of this special fund. The secretary-treasurer is General Lawrason Riggs, Baltimore.

Carnegie Institute Grants.—The authorities of the Carnegie Institute have just awarded 5 grants to Johns Hopkins

University for research work. One is to Dr. John J. Abel, professor of physiological chemistry, of $1,000 for the purchase of apparatus necessary in his work. A great deal of the apparatus used by Dr. Abel has to be made specially for his purpose, and the cost is often very high. The other grants were to the departments of electricity, physics, analytical chemistry, and physical chemistry. These appropriations are among the first that have been made.

MINNESOTA.

Consolidation Proposed.—On account of the light registration in the homeopathic department of the state university it has been suggested that the department be consolidated with the regular school, with a chair of homeopathic medicine.

Smallpox.—There were 324 new cases of smallpox reported to the State Board of Health during the week ending February 2. The majority of these cases are old ones, however, that were not reported when they occurred, and were discovered on a recent visit of inspection to Douglas and Otter Tail counties. Douglas County reports 149 cases, 100 of which are in Millerville, and 20 in Leaf Valley. Rice County reports 80 cases, 64 of them in Webster and 16 in Wheatland. Otter Tail County reports 33, Hennepin 7, and Ramsey 3.

Personal.—Dr. Alexander J. Stone, St. Paul, has succeeded Dr. Albert A. Ames, formerly of Minneapolis, as surgeon-general of Minnesota, with rank of brigadier-general.——Dr. Rudolph Schiffman, St. Paul, president of the assembly, has been granted a five months' leave of absence and has started for the Orient.——Drs. Malcolm McKinnon, Forston, and Charles W. More, Eveleth, have been appointed members of the State Board of Health.——Drs. Eric O. Giere, Madison, and Carl J. Rignell, Minneapolis, have been appointed members of the State Board of Medical Examiners.

MISSOURI.

Hospital Opened.—The A. R. Levering Hospital, Hannibal, was formally opened with imposing ceremonies, February 5.

To Honor Old Practitioners.—The St. Louis Medical Society is about to give a banquet in honor of Drs. Simon Pollock, who has practiced 68 years; William Johnston, who has practiced 65 years, and William M. McPheeters, who has practiced 63 years.

Bill for **Three Boards.**—Dr. Quig of Cooper County has introduced a bill in the house providing for the appointment by the governor of three separate medical boards, one for each of the three "schools." Each board is to consist of five members and is to examine applicants for the respective schools and issue licenses to those found qualified.

World's Fair Medical Report.—Medical Director Leonidas H. Laidley of the World's Fair has made a report on the state of health of the persons residing on the World's Fair grounds and employed there. One death occurred from a fall at the electricity building. During December 93 cases were treated at the Emergency Hospital on the grounds. Of these 53 were surgical and 43 medical. One birth is reported. The number of residents on the grounds is estimated at 395.

Personal.—Dr. Albert L. Brown, police surgeon of Kansas City, has resigned and has been succeeded by Dr. A. E. Eubanks.——Dr. Abra C. Pettijohn, Brookfield, has been confirmed as member of the State Board of Charities and Corrections.——The appointments of Drs. John T. Thatcher, Oregon; Winn F. Morrow, Kansas City; Benjamin G. Dysart, Paris; A. W. McAlester, Columbia; Dempsey T. Powell, Thayer; J. Alfred Adcock, Warrensburg, and Mont M. Hamlin, St. Louis, as members of the State Board of Health, have been confirmed by the Senate.

NEW YORK.

Protest Against Hospital Admitting Fever Patients.—Twenty-five physicians of Niagara Falls have signed a petition to the trustees of the Louise Memorial Hospital protesting against its use for scarlet fever quarantine purposes, stating that its usefulness as a maternity hospital and for surgical operations would be for a long time destroyed by allowing fever patients there.

Warning Renewed.—In the issue of February 7, the readers of THE JOURNAL were warned against one F. Whiting who had been endeavoring to collect money on account of THE JOURNAL and of the American Medical Association. We are now informed that this fraud has been operating in Binghamton, and warn all physicians against paying any money to him, as he is unauthorized. THE JOURNAL will appreciate any information regarding this person's whereabouts.

Pure Water for Niagara Falls.—Niagara Falls, which is now drinking Niagara river water polluted by the sewage of Buffalo, and where there are usually 400 to 500 cases of typhoid fever in a year, will hereafter be supplied by the Western New York Water Company, which has absorbed the Niagara Falls Waterworks Company. Eventually the Western New York Water Company will abandon its water supply from Niagara river and will pump water from Lake Erie, three miles above Buffalo and over 7,700 feet from shore.

Typhoid at Ithaca and Cornell.—In a letter written by President Schurman of Cornell University, he complains of the sensational newspaper reports regarding the prevalence of typhoid at Cornell University. There are, however, 55 students ill with the disease, most of the cases being mild, while two or three are critical. In a census taken among physicians it was found that an additional number of ten students are ill with the disease outside of the infirmary. There is also one serious case in the city hospital. The cause of the typhoid is the contamination of water supply for the city of Ithaca. Fortunately Falls Creek, which supplies Cornell University, is not contaminated. It is supposed that the present epidemic can be traced to Italian and Hungarian laborers who were working, up to the beginning of winter, on the construction of a new dam which the waterworks company is erecting.

How Not to Deal with Smallpox.—Rochester should serve as an example to all cities whose councils use the *manana* policy of dealing with epidemics, especially that of smallpox. In Buffalo the health commissioner has again and again urged the absolute necessity of the maintenance of a modern quarantine hospital, the plans have at last been prepared and the city will soon have a modern hospital where all contagious cases may be taken and be humanely treated. When Rochester suddenly found herself face to face with an epidemic of smallpox, the city was unprepared to deal with it. The committee of councilmen is now compelled to hear evidence which in no way does credit to the authorities in charge of the Hope Hospital. It was necessary to use election booths and tents, and according to evidence submitted some beds were covered with snow, the bed sheets and bed clothing were filthy, the food was insufficient, the nursing poor and many patients were sent home infested with vermin.

New York City.

Proposed Tuberculosis Camp.—The agitation for better facilities for the great army of consumptive poor in this city has led to the proposition that a lot of suitable tents be erected, thus saving time and money. The plan has the approval of the commissioner of health, and several sites have already been offered.

Wholesale Insurance Frauds.—Insurance circles have been much aroused over the discovery of a plot by which life insurance companies have been systematically swindled for ten years or more. The scheme centers around that portion of the city known as "Little Italy." At present, it is known that about a dozen life insurance companies have been swindled, and that at least 111 fraudulent policies have been issued. Some idea of the extent of the swindle may be inferred from the statement that there is proof that one member of the gang has realized $200,000. The system was worked on a percentage basis, and involved physicians, notaries public, undertakers and others. Drs. Francesco Mucci and Albrecht Loewit, are under heavy bail charged with being parties to the frauds.

Drug and Other Adulterations.—The pharmacists of the city are incensed over the recent publication of the fact that the board of health found that phenacetin was frequently adulterated with acetanilid and other cheaper substances. They call in question the accuracy of the analyses made by the chemist of the health department, and demand a re-examination by a disinterested person. At the last meeting of the Society of Medical Jurisprudence, Dr. H. W. Wiley, chief of the Chemical Division of the Department of Agriculture, talked on some of the dangers that lurk in the things used in daily life. He said that it was not at all uncommon to find a large amount of arsenic in the dyes used for stockings, even in the case of black stockings. The same poison was often found in dress goods and wall paper. The substitution of wood alcohol for genuine ethyl alcohol in bay rum, essence of Jamaica ginger, and other substances, often gave rise to serious consequences. The speaker directed special attention to the great evil arising from the sale of patent medicines under misleading names or with incorrect formulæ. In this way it was no unusual thing for consumers to become addicted to the use of alcohol or of cocain without knowing the nature of the so-called tonics they had been taking.

It was recommended that a system of national and state inspection be established.

Buffalo.

Medical Examiner vs. Coroner System.—Medical Examiner Danser's first annual report to the Erie County Board of Supervisors will show a saving to the county of $7,000 in investigating sudden deaths, as compared to the old coroner's system.

Closed in Memory of Mynter.—The Medical Department of the University of Buffalo was closed February 11, as a mark of respect to the memory of Dr. Herman Mynter, deceased, who occupied the chair of clinical surgery in that institution at the time of his death.

To Lift Hospital Debt.—Mr. Frank Goodyear has contributed $50,000 and Mr. William H. Hamlin $49,900 as a fund to lift the debt of the Buffalo General Hospital. It is expected that $100,000 more will be raised by subscriptions to clear the indebtedness and to make some urgently needed additions to the buildings.

Violators of Anti-Spitting Ordinance Punished.—Because spitting offenders have been usually released by the police justices, their cases will hereafter be considered by the judges of the municipal court. Two convictions for spitting in street cars were obtained in municipal court. One offender was fined $5, the other $2 and costs. The anti-spitting ordinance is to be enforced more rigorously, and 14 patrolmen have been detailed on this duty.

PENNSYLVANIA.

Free Bed Endowed.—By the will of Miss Carrie S. Kinsey of Bristol $5,000 is left to the Methodist Hospital, Philadelphia, to endow a free bed in memory of her father, the late William Kinsey.

To Prevent Tuberculosis.—The Pennsylvania Society for the Prevention of Tuberculosis is urging the passage of a bill by the legislature appropriating $500,000 for the prevention of tuberculosis and the care of incipient cases in the state.

Bill Against Irregular Practice.—A bill introduced into the legislature would so amend the law of 1893 as to punish a person for "entering on or continuing in the profession or occupation of treating disease or injury by the use of medicine or any other means or agency" either for or without valuable consideration, unless the person be licensed under the specified act. The penalty is any sum between $200 and $500, and imprisonment for 30 days to six months. It is said that the bill is designed to check osteopathy and Eddyism.

Fix Blame for Smallpox.—At the "Health Convention" held at Johnstown, February 12, many members of boards of health and county officials were present from various parts of the state. Dr. Benjamin Lee, secretary of the State Board of Health, in replying to the question: "Whose fault is it that smallpox has flourished in Pennsylvania?" placed the responsibility on the discontinuation of infant vaccination; on a class of ill-informed obstructionists calling themselves antivaccinationists; on school directors who have failed to enforce the compulsory vaccination law; on communities which have failed to organize boards of health; and on medical colleges who have been derelict in instructing their students how to recognize the disease. Enforced vaccination was advised by the convention. The governor is urged to use his influence toward securing an appropriation of $50,000 by the legislature to aid in suppressing epidemics.

Philadelphia.

First Aid Lectures to Railroad Men.—Through the president of its board of trustees, Hon. William Potter, Jefferson Medical College has offered a course of free lectures on "First Aid to the Injured," to employes of steam railroads running into Philadelphia. The officials of the roads, in responding, thanked the college officials and favored the plan. It is probable that the proposed course will be arranged.

Many Bequests to Charities.—The estate of Robert J. Wright, recently adjudicated, bequeathes $583 to each of 33 charities. Some of the beneficiaries are as follows: Children's Hospital, Philadelphia; Pennsylvania Training School for Feeble-Minded Children; Philadelphia Home for Infants; St. Christopher's Hospital for Children; Philadelphia Home for Incurables, and Presbyterian Hospital, Children's Ward.

Phipps Institute at Work.—The temporary Henry Phipps Institute for the Cure and Prevention of Tuberculosis has begun active work. Numerous patients are being treated daily at the sanitarium; visits are made to the homes of patients by the staff, and milk and eggs are being provided for the very poor patients. The staff includes, besides Dr. Lawrence F. Flick, the director, Drs. Joseph P. Walsh, Willoughby Irwin and Charles J. Hatfield.

To Aid Library.—Earnest efforts are being made among physicians and others to raise $50,000 to be added to the recent gift of a like sum by Andrew Carnegie for the betterment of the library of the College of Physicians. The library building, which is now greatly crowded, will be enlarged or rebuilt on a new site. The collection of books is the third, possibly the second largest of its kind in the world, and the anatomic and pathologic collection the greatest in the country.

Typhoid, Smallpox and Pertussis.—For the week ended February 14, 287 new cases of typhoid fever were reported, with 23 deaths. Since the beginning of the year 1919 cases have occurred, with 152 deaths. The disease is not of a virulent type. During the week mentioned, 30 new cases of smallpox occurred, with 5 deaths. There were many cases of whooping cough with 15 deaths. The bureau of health has decided that in future all cases of smallpox must be sent to the Municipal Hospital.

Explosion Wrecks Hospital.—On the night of February 12, a boiler in the basement of the Medico-Chirurgical Hospital exploded, doing so much damage to the building that it may have to be torn down. Fortunately there was no loss of life or serious personal injury. A panic was prevented by the cool, prompt action of the hospital officials. As the building did not take fire, no insurance can be recovered. The hospital will consequently be crippled financially. The board of trustees have made a public appeal for aid in a series of resolutions, closing as follows:

Resolved, That we earnestly appeal to our fellow citizens to aid us in our present predicament. We have no funds to meet the expense of repairs, and yet they must be done at once. We can not close our hospital. Every room and bed is full, and the work must go on.

GENERAL.

The Hawaiian Board of Health, January 21, elected Dr. C. B. Cooper president, vice Dr. H. C. Sloggett, resigned.

A famine in Dalmatia and an epidemic of typhoid fever are causing great loss of life. There is very little medical assistance to be had.

More Hospital Cars.—The Erie Railroad has a hospital car and will place similar ones on each division, ready for speedy dispatch to accidents.

American Money for India.—It is reported that Henry Phipps, director of the Carnegie Steel Company, has given $100,000 to establish an agricultural laboratory and a Pasteur institute in India.

German Faker Convicted.—Herr Nardenkoetter, who has been a notorious advertising faker in Berlin for years, was fined $900 and to be imprisoned three years. He forfeited bail and escaped to England. He had contrived to defy the medical societies and public prosecutors until recently.

Carbolic Injections in Tetanus.—Several cases of tetanus are reported in the newspapers with the treatment by carbolic acid injections. The papers treat it as a new discovery. It has been used for several years. The strengths reported are 4 and 10 per cent. In one case 10 drops were injected every three hours. It will be remembered that this remedy is also of value in diphtheria.

A Model Surgical Clinic at Marseilles.—Pantaloni's new model clinic at Marseilles, erected by private enterprise, is described by Baudouin in the *Gaz. Med. de Paris* with many illustrations. Hot, sterilized water is freely supplied on all the five floors. The elevator is large enough for a bed to be wheeled into it. The bath tubs are in the center of the bath rooms, instead of at the side. Among the innovations is a room specially designed for physicians from outside to meet and prepare to witness or aid in operations.

Collection of Appliances for Medical Instruction.—The exposition on these lines held in Berlin last year proved so popular that the authorities are organizing a permanent collection as a museum, and also for loaning on demand. It is expected that the articles will be found useful in the preventive lectures, both in regard to venereal diseases and tuberculosis, and also in popular courses on hygiene, etc. There are to be twelve different exhibits: 1 and 2, specimens of anatomy and pathologic anatomy; 3, microscopic specimens; 4, casts depicting various diseases; 5, photographs and atlases; 6 to 8, lantern, stereoscope and kinematograph slides; 9, appliances for technic of microscopy; 10 to 12, apparatus for demonstrations.

Less Plague in Mexico.—The bubonic plague is subsiding in Mexico. There has been a hysterical tendency—as is com-

mon in such cases—of spreading unfounded reports of the disease existing at other points. One of these rumors was concerning Hermosillo, and the authorities of that libeled place traced it down, says the *Los Angeles Times*, to one of their citizens who had reported to friends that a certain young man had the plague. He was arrested and told the judge that it was a joke. The judge thought the joke was not carried far enough, and sent the joker to the chain gang for sixty days. All authorities of towns and of railroads have been notified by the government to hold all persons who spread rumors.

The **dengue epidemic in Honolulu** is causing much suffering and is particularly prevalent among school children. At last reports schools had not closed, although classes were interfered with by the large numbers of those absent. The last epidemic of dengue in the islands was in the seventies. The great attack was in 1852, when a ship from Panama loaded with gold seekers bound for San Francisco stopped at the port of Lahaina in distress. There was much sickness on board, as well as scarcity of food and water, and dengue was brought ashore and caused much sickness. The present visitation began about the middle of January. The infection is thought to have been brought on transports from Manila or else by Porto Ricans, on whose island the disease is endemic.

New Biochemical Journal.—A new publication has appeared in Berlin issued by Carl Oppenheimer, under the direction of Ehrlich, Fischer, Kossel, Liebreich, Muller, Proskauer, Salkowski and Zuntz, with Heinrich Stern, New York, editor for the United States and Canada. The object of the publication will be:

A. To report such experiments and observations of physical and employed chemistry as are of importance to the physician.
B. Reports on the physiology of plants.
C. Physiologic chemistry in the narrower sense (constituents of the body and their derivates).
D. Chemistry of the tissues and organs under normal and pathologic conditions.
E. Chemistry of digestion, secretions and excretions, metabolism and blood.
F. Ferments and fermentations, toxins of a non-bacterial nature.
G. Chemistry of the pathogenic micro-organisms (toxins, antitoxins), phenomena of immunity.
H. Toxicology and pharmacology.
I. Hygienic chemistry, disinfection, examination of water.

This interesting field, in which so much advance is being made, needs an organ of its own. The American editor writes us that he is anxious to receive abstracts of papers on work done by American physicians in these branches.

That Decreasing Birth Rate.—Great interest is taken in the alleged decrease in the birth rate. The newspapers of the country are giving much space to articles, interviews, editorials and columns of statistics. The clerks in the Census Bureau are reported to be busy compiling statistics for inquirers. Some of these statistics are quoted as follows: The average size of families in the United States has steadily decreased in the past 50 years, as follows: 1850, 5.6; 1860, 5.3; 1870, 5.1; 1880, 5; 1890, 4.9; 1900, 4.7. It has increased since 1890 only in North Dakota, South Dakota and Oklahoma from 4.7 to 4.9, from 4.7 to 4.9, and from 4.1 to 4.6 respectively. In Connecticut and Rhode Island it remained stationary, and in all other states it decreased. From 1880 to 1890 there was an increase in all the states in the western division and in the south Atlantic states. The birth rate for the entire United States in 1890 per thousand of population was 26.9. The birth rate per thousand of population in 1900 was 27.2. In the northeastern division of states the birth rate per thousand of population was as follows, the first figure being that for 1890 and the second for 1900:

Connecticut, 22.3 and 24; Maine, 17.6 and 21.1; Massachusetts, 21.5 and 24; New Hampshire, 18 and 21.3; New York, 23.3 and 24.2; Rhode Island, 22.3 and 24.3; Vermont, 18.3 and 21.3.

In the central and northern divisions the average birth rate for 1900 was 25.9 and for 1890 it was 26.8.

In the southern division the average birth rate was, in 1900, 31.5, and in 1890 it was 30.1.

In the western division the average birth rate, per 1,000, was 22.8 in 1900 and in 1890 it was 22.9.

By the birth places of mothers of United States children these are the percentages showing the birth per 1,000 of population as based on the census of 1900:

Ireland, 32.7 per 1,000; Germany, 32.6; England and Wales, 25.4; Canada, 37.0; Scandinavia, 46.7; Scotland, 30.1; Italy, 60.9; France, 18.4; Hungary, 65.5; Bohemia, 57; Russia, 64.6, and all other countries, 56.9.

These figures are not verified by us. The Census Bureau admits that its birth statistics are very unsatisfactory. Most of the comparisons are made between the birth rate and death rate, and the percentages are given in those conditions.

Amending the Statutes Relating to Patents.—Senator Platt of New York has introduced a bill in the Senate, No. 7062, entitled, "Amending the Statutes Relating to Patents," relieving medical and dental practitioners from unjust burdens imposed by patentees holding patents covering methods and devices for treating human diseases, ailments and disabilities, which provides that Section 4886 of the Revised Statutes be amended. The original reads as follows:

Any person who has invented or discovered any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement thereof, not known or used by others in this country before his invention or discovery thereof, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his application, and not in public use or on sale in this country for more than two years prior to his application, unless the same is proved to have been abandoned, may, on payment of the fees required by law and other due proceedings had, obtain a patent therefor.

The following it is proposed to add:

But no patent shall be granted on any art of treating human disease, or ailment, or disability, or on any device adapted to be used in the treatment of human disease or disability, or attached to the human body and used as a substitute for any lost part thereof, or on any art of making such device, unless such device is adapted to be put on the market and sold.

The bill further would amend Section 4921, which reads as follows:

That the several courts vested with jurisdiction of cases arising under the patent laws shall have power to grant injunctions according to the course and principles of courts of equity to prevent the violation of any right secured by patent, on such terms as the court may deem reasonable; and on a decree being rendered in any such case for an infringement the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby, and the court shall assess the same or cause the same to be assessed under its direction. And the court shall have the same power to increase such damages, in its discretion, as is given to increase the damages found by verdicts in action in the nature of actions of trespass on the case.

But in any suit or action brought for the infringement of any patent there shall be no recovery of profits or damages for any infringement committed more than six years before the filing of the bill of complaints, or the issuing of the writ in such suit or action, and this provision shall apply to existing causes of action.

The amendment would add the following:

Nor shall any suit or action be maintained for the infringement of any patent for an art of treating human diseases, or ailment, or disability, or for any patent for any device adapted to be used in the treatment of human disability, ailment or disease, or attached to the human body and used as a substitute for a lost part thereof, or an art of making such device, unless it appear that such device can be made and put on the market.

The bill is to "take effect immediately on its passage, but the paragraph added to Section 4886 shall not be held to apply to any application for patent filed prior to the passage hereof nor to patents granted on applications filed prior to said date; nor shall the amendment to Section 4921 affect the rights of action that may have occurred prior to the passage hereof."

CANADA.

Smallpox at Galt, Ontario, Under Control.—The epidemic of smallpox which has lately been causing some alarm in Galt, Ontario, is now said to be practically at an end. In all there have been 81 cases, affecting 21 families, with 5 deaths. The number now in the isolation hospital is 16. Dr. Macdougall King of Toronto has had charge of the isolation hospital.

Prevention of Tuberculosis in Montreal.—Definite steps have now been taken by the Montreal League for the Prevention of Tuberculosis. The executive committee met last week and received the report of the special committee on organization. Dr. A. J. Richer was appointed permanent secretary. Dr. Labergeg, M.H.O., has promised to recommend to the city council that the city give assistance. The Victorian Order of Nurses will co-operate. The Provincial Board of Health, through Dr. Lachapelle has offered to look after the distribution of literature among the poorer classes.

Toronto's New Medical Building.—A deputation from the medical faculty of Toronto University waited on Premier Ross one afternoon of last week and asked for an additional loan of $50,000 to complete the new medical building. The previous arrangement with the government was for a loan of $125,000, but it has been found that that amount will be inadequate. The new building is nearly completed, and when finished, it is said, it will be the finest type of modern college building on this continent. Toronto has now the largest roll of any medical college in Canada, even leading McGill; the number this season is 420. The main building is entirely planned on the unit system, the standard size of the classrooms being twenty-three by thirty feet.

Ontario Health Report.—The regular quarterly meeting of the Ontario Board of Health was held last week. Smallpox, vaccination, scarlet fever and the septic tank method of sewage disposal were the chief subjects under discussion. Secretary Bryce stated that during 1902 there had been in Ontario 2,500 cases of smallpox, resulting in 10 deaths. Of scarlet fever there had been 3,119 cases, with 266 deaths. In January, 1903, smallpox had existed in 42 centers and there had been 196 cases and 10 deaths, compared with 650 cases and 1 death in January, 1902. The most serious outbreak had occurred at Galt. Of the 5 cases which died at Galt, not one of them had ever been vaccinated. Out of a total population of 8,000, 5,000 were vaccinated in January. Toronto, Windsor and Walkerville were the only municipalities in Ontario in which general vaccination was practiced, although there had been a law on the statute books for forty years calling for compulsory vaccination of infants born every year. Later on the board approved a draft bill to be submitted to the coming session of the legislature making more effective the vaccination law. Scarlet fever had been more virulent than for years. In Toronto alone during the last six months of 1902, there had been 701 cases, with 88 deaths. The death rate had been 9 per cent. in the cities generally, and 12.5 per cent. in Toronto, while in January, 1903, there had been 106 cases and 21 deaths, a much higher percentage. The board also discussed the experimental sewage purification work done by the laboratory of the board last year at the town of Berlin, and reported favorably on the septic tank system.

FOREIGN.

The cancer research fund in England has been swelled by $50,000 from the Coats family.

Campaign Against Charlatans in Germany.—The last issue of the *Allg. Med. Ct.-Ztg.* mentions four suits against charlatans, resulting in the imposition of a fine of $250 each on two, and the condemnation to six months' and eighteen months' imprisonment of two prayer healers.

The Second International Congress of the Medical Press will meet at Madrid, April 20 to 22, immediately before the opening of the International Medical Congress. The members are entitled to the same rebates and privileges as the members of the latter. The general secretary is Dr. Larra Corezo, 17 Leganitor, Madrid.

St. Bartholomew's Hospital, London, is asking for $1,500,000 to build additional buildings on the adjoining land it has purchased. It is located in a shop and warehouse district, and could sell its valuable site for enough to buy and build where land is cheaper. This hospital has never publicly asked financial aid before, and has been proud of the fact.

Prophylaxis of Venereal Diseases.—Munich and Bavaria are organizing a society for the prevention of the spread of venereal diseases. The meetings are held, like those at Berlin, in the city hall, at 11 a. m., on Sundays. The *Muenchener Med. Woch.* issues an appeal to physicians to help make the society a success, "to show that the profession, as always, takes the lead in matters involving the suppression of disease."

Preventive Congress in Germany.—The German Society for the Combating of Venereal Diseases will hold its first congress March 9 and 10 at Frankfort. a. M. Some of the addresses will be on the themes: "Legal Responsibility for Menace to Health by Persons with Venereal Disease"; "Venereal Diseases in Their Legal Relations"; "How Can the Physician by His Advice Prevent the Spread of Venereal Diseases?" etc.

The Unna Prize.—The prize of $75 offered by Unna for the best work on the coccus found in eczema with discharge, was not awarded in 1902. The sum is therefore doubled, and further competition invited. The coccus is the *Diclimactericus albus flavens* (*Typus Traubel*), and it must be studied in comparison with the pyogenic staphylococci. Articles must be sealed and received by Leopold Voss, Hohe Bleichen 34, Hamburg, before December, 1903.

Serum Cure for Scarlet Fever.—Prof. Dr. Adolf Baginsky, Berlin, is reported by cable as having announced remarkable results from the use of antistreptococcus serum. Baginsky modestly disclaims any credit for the discovery of the serum, the honor of which he accords to Herr Aronson. The only credit he takes to himself is the discovery that scarlet fever, like erysipelas, is caused by the streptococcus. During the past 12 years 701 patients have been placed under the serum treatment, and the mortality from the disease has been reduced to 8 per cent.

Trachoma in Germany.—The medical inspectors of the schools of Prussia did not find a single school in which less than 5 per cent. of the children were affected with granular lids. In the villages the proportion averaged 20 to 48 per cent. and at one place more than half the children were affected. Raehlmann states that more than half a million persons suffer from trachoma in three provinces alone. The government appropriates every year $87,500 to fight it, but still more energetic measures are demanded by the Berlin medical press.

LONDON LETTER.

Recent Researches in Malaria in India.

An important contribution to our knowledge of malaria has been published in Calcutta by S. P. James, army surgeon, who is on special duty with the Royal Society's commissions on malaria. It forms one of the new series of "Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India." In some of the work he was associated with Dr. J. W. W. Stephens and Dr. S. R. Christophers. In his classification of Indian anopheles Dr. James recognized 16 species, among which *Anopheles fluviatilis* and *Anopheles culicifacies* are the most common conveyers of malaria. *Anopheles rossii* is almost certainly the commonest species in India and three species of the human malaria parasite can be made experimentally to develop in it, but Dr. James never yet found it infected in nature. Of the remaining species most are either rare or are seldom found in human habitations or have not been found infected with malaria in the natural state. It has been suggested that the naturally uninfected anopheles may bite only cattle and horses. It has been discovered that the embryos of *Filaria sanguinis hominis* can develop in *Anopheles nigerrimus* and *Anopheles rossii*. In consequence of the difficulty which is usually found in the identification of the different species of Indian anopheles, Dr. James recommends a classification in three primary subdivisions determined by the palp markings—namely, (1) palpi unbanded; (2) palpi with four white bands; and (3) palpi with three white bands. Dr. Christophers has made the important observation that anopheles not only select their breeding places but that each species has a particular kind of breeding ground that it prefers to any other. There is evidence that the mosquitoes which infest human habitations will readily fly to a breeding place a quarter of a mile away, but that they will hardly ever fly over three-quarters of a mile. Koch and, independently, Dr. Stephens and Dr. Christophers discovered that a large percentage of native children in Africa constantly have malaria parasites in their blood, although they may present none of the more evident clinical symptoms of malaria fever. Dr. James has confirmed and extended these observations for certain parts of India, in some of which there is an infection of from 60 to 75 per cent. of the children under 10 years of age, with no infection of adults. This percentage of infected children, he says, affords a true test of the endemicity of malaria and the figure representing it may be termed the "malarial endemicity index," or, shortly, the endemic index. These children are the chief source from which anopheles mosquitoes become infected. As in Africa so in certain highly-malarious districts of India, there is a diminished infection of the children with advancing age, and the adults are relatively immune, but in less malarious districts in India the immunity of the adult native is not so marked and the diminished infection of the children at advancing age-periods is not shown. It has been said that these infected children present no clinical symptoms of malaria, but Dr. James finds that in the evening many of them have to lie down, their temperatures rise, and careful examination shows that their general health is seriously affected. One in whom quartan parasites were found was only nine months old.

The Plague.

India: During the weeks ending December 27, January 3 and 10 the deaths from plague amounted to 15,827, 15,686, and 16,197 respectively. During the first week of January, 1902, the mortality was only 10,386. Thus there is an enormous increase this year when the disease is more widespread than at the commencement of any previous year. In the Punjab there has been a marked decrease from 2,238 deaths for the week ending January 10 to 1,236 for the week ending January 3. In the Bombay Presidency the deaths for the three weeks mentioned were 7,025, 7,295 and 8,440 respectively. In the city of Poona the increase is serious. On January 15 118 fresh cases and 98 deaths were reported. Hundreds of people have left the city for segregation camps. *South Africa:* Plague continues to prevail in Durban. On January 26 42 cases were re-

ported, of which 27 were fatal. On that date 3 Europeans, 7 natives and 3 Indians were under treatment.

Vital Statistics for 1902. Lowest Death Rate on Record.

According to the returns furnished by the local registrars to the Registrar-General 942,819 births and 537,080 deaths were registered in England and Wales during the year 1902. The natural increase of population by excess of births over deaths was, therefore, 405,793, the average annual increase in the preceding 5 years having been 363,053. The birth rate was 28.6 per 1,000 of the population, which is 0.1 per 1,000 higher than the rate in 1901, but lower than that in any other year on record, and compared with the average in the preceding ten years shows a decrease of 1.0 per 1,000. The death rate was 16.3 per 1,000, which is the lowest rate on record, the only previously-recorded rates below 17 per 1,000 having been 16.5 in 1894 and 16.9 in 1901, and as against the last decennial average it shows a decrease of 1.6 per 1,000.

The "Sleeping Sickness." Departure of Commissioners for Uganda.

Lieut.-Col. Bruce and Dr. Nabarro, the new commissioners who are being dispatched by the government and the Royal Society to study sleeping sickness in Uganda, will leave England on the 12th inst. The duration of their stay in Uganda will probably be not less than from 6 to 12 months. Colonel Bruce is the discoverer of the parasite in the tsetse-fly disease and also of Malta fever. He was in Ladysmith during the siege.

Marriages.

HENRY W. CURTIN, M.D., to Miss Lottie Carten, both of St. Louis, February 4.

D. L. ROSE, M.D., Sherman, Mich., to Miss Gail Hooper of Battle Creek, Mich., January 31.

GEORGE H. BRETT, M.D., Williamston, Mich., to Miss Frieda Paulina of Chicago, January 12.

HENRY M. NEDRY, M.D., Dachester, Wis., to Miss Minnie Rosin of Colby, Wis., at Minneapolis, January 21.

OSCAR CHRYSLER, M.D., National Home, Milwaukee, Wis., to Miss Birdseye Knox, at Meadowmere, Wis., February 18.

Deaths.

Herman Mynter, M.D.

By the death of Dr. Herman Mynter, which occurred at his home in Buffalo, N. Y., February 9, at the age of 58, America has lost a great surgeon and surgery one of its most earnest and honest exponents. He was born in Kereack, Denmark, and was graduated in medicine from the University of Copenhagen, in 1875. After serving four years in the Danish navy he came to Buffalo, which he afterward made his home. He was a surgeon of international repute, an acknowledged authority on appendicitis, and his contributions to surgical literature were always thoughtful, well considered and valuable.

He was a professor of surgery in Niagara University, and after the amalgamation of this school with the Medical Department of the University of Buffalo became professor of clinical surgery in the latter school. He was surgeon to the German Deaconess and the German Hospital, a member of the Buffalo Academy of Medicine, Buffalo Physicians' Club, Erie County Medical Society, Medical Society of the State of New York and the American Medical Association. Dr. Mynter's name came into great popular prominence through his connection with the case of President McKinley. He was the first to answer the summons after the President was shot, and was intimately connected with the case until the fatal termination.

Last summer he paid a visit of several months to his fatherland, where he was accorded the high honors to which his ability entitled him. He was taken ill with myocarditis, and was confined to his bed for ten days before his death, which occurred February 9, at 10:30 p. m. He was attended in his last illness by Drs. Charles Cary, Henry R. Hopkins and Charles G. Stockton. The cause of death is stated to have been myocardial fatty degeneration. The loss of Dr. Mynter will be keenly felt by the laity, and especially by his colleagues, by whom he was greatly respected because of his superior skill as a surgeon and his many scholarly and gentlemanly qualities.

John Homans, M.D. Harvard University Medical School, Boston, 1862, a pioneer in abdominal surgery and the third surgeon of his family by lineal descent; who served both in the Navy and Army in the Civil War, being medical director of the army of the Shenandoah at its close, died at his home in Boston, February 7, after an illness of two weeks, aged 66. He was a member of the Massachusetts Medical Society, the Boston Society Medical Improvement, surgeon to the Boston Dispensary, the Children's Hospital, the Carney Hospital and the Massachusetts General Hospital, and was lecturer on surgery at Harvard Medical School.

John Ridgely, M.D. University of Maryland, Baltimore, 1841, a veteran of the Mexican and Civil wars, a member of the party which explored the Yukon River in the early 40s, for the last 12 years keeper of the National Cemetery at Fort Harrison, near Richmond, Va., died at his home in that place, February 4, aged 83.

Benjamin F. Eads, M.D. University of Pennsylvania, Philadelphia, 1856, a member of the American Medical Association and chief surgeon of the Texas and Pacific Railway, died suddenly at his home in Marshall, Texas, February 1. He had been in feeble health for some time.

Thomas N. De Bowes, M.D. New York University, 1858, surgeon of a Connecticut regiment in the Civil War, and for fifteen years autopsy physician for New York City, died from infirmities incident to old age, after an illness of two months, February 7, aged 70.

Arista O. Lucas, M.D. Western Reserve University, Cleveland, Ohio, 1891, a member of the American Medical Association, died at his home in New Washington, Ohio, February 3, from tubercular peritonitis, after an illness of nearly four months, aged 37.

Thomas Jefferson Grove, M.D. Medical School of the Valley of Virginia, Winchester, 1849, a surgeon in the Confederate service during the Civil War, died at his home in Petersburg, W. Va., February 1, from paralysis, aged 74.

Fairfax Schley, M.D. University of Maryland, Baltimore, 1846, who retired from practice to engage in the drug business nine years later, died at his home in Frederick, Md., February 1, from heart disease after a brief illness, aged 79.

Henry W. Allan, M.D. Bellevue Hospital Medical College, New York, 1882 died from the effects of a self-administered dose of hydrocyanic acid, at a drug store near his residence in East New York, February 5, aged 48.

Archibald E. Covert, M.D. New York University, 1892, a member of the staff of the J. Hood Wright Hospital, New York City, died in that institution, February 2, from Bright's disease, after a short illness, aged 32.

William W. Hinish, M.D. Miami Medical College, Cincinnati, 1875, was found dead in his office in Chicago, February 10, from the effects of morphin, taken, it is alleged, with suicidal intent, aged 60.

Charles L. Floor, M.D. Western Reserve University, Cleveland, 1882, died at his home in Youngstown, Ohio, January 30, nine days after an operation for abscess of the lower bowel, aged 44.

Erasmus M. Chapin, M.D. Columbian University, Washington, D. C., 1841, died at his home in Washington, D. C., February 8, from shock following a fall the day before, aged 82.

Charles Collins Bradley, M.D. Willoughby (Ohio) University Medical Department, 1845, died at his home in Rock Rapids, Iowa, February 4, after 20 years of invalidism, aged 82.

Emmett E. Dixon, M.D. Atlanta (Ga.) Medical College, 1867, died at his home in Gainesville, Ga., February 1, after an illness of several weeks, from Bright's disease, aged 55.

Charles A. Mahneke, M.D. University of Berlin, Germany, 1866, died at Appleton, Wis., January 28, after an illness of three weeks, from sepsis following an operation, aged 55.

Franklin A. Gardner, M.D. New York Homeopathic Medical College and Hospital, 1882, died at his residence in Washington, D. C., February 13, from typhoid fever, aged 45.

George H. Gilbert, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1874, of Cleveland, died suddenly at a drug store in that city, February 9, from heart disease.

Jacob Burger, M.D. Eclectic Medical Institute, Cincinnati, 1856, died at his home in Franklin Square, Ohio, from paralysis, January 31, after an illness of two days, aged 75.

John P. Agnew, M.D. University of Pennsylvania, Philadelphia, 1864, who retired from practice in 1883, died at his home in Philadelphia, February 5, aged 69.

Lucian H. Shepherd, M.D. College of Medicine, Syracuse (N. Y.) University, 1895, died at his home in Oswego, N. Y., January 25, from typhoid fever, aged 37.

Morrill Wyman, M.D. Harvard University Medical School, Boston, 1837, died at his home in Cambridge, Mass., January 30, after an illness of five days, aged 90.

Lucien W. Curtis, M.D. New York University, 1848, of Southbridge, Mass., died in Worcester, January 30, from shock a day after an accident.

John R. Burton, M.D. College of Physicians and Surgeons, New York City, 1848, died at his home in Valdosta, Ga., February 7, aged 78.

Samuel Gray, M.D. University of Maryland, Baltimore, 1858, died from paralysis at his home in Laurel, Md., January 30, aged 72.

Marbury Brewer, M.D. University of Maryland, Baltimore, 1850, died at his home in Baltimore, January 24, from heart disease, aged 72.

Burdett A. Terrett, M.D. Tulane University, New Orleans, 1900, died at his home in Natchitoches, La., January 23, after a short illness.

John Ash, M.D. Philadelphia College of Medicine and Surgery, 1851, died at his home in Brighton, Ill., January 31, aged 84.

William S. Dempsey, M.D. Medical College of Ohio, Cincinnati, 1874, died at his home in Richmond, Ind., February 7, aged 64.

David M. Browder, M.D. Eclectic Medical Institute, Cincinnati, 1885, died at his home in Sweetwater, Tenn., February 5.

Book Notices.

THE NOSE AND THROAT IN MEDICAL HISTORY. By Jonathan Wright, M.D., Brooklyn, N. Y. 8vo. Cloth. Pp. 250. Ten Illustrations. Price, $2.00 net. St. Louis, Mo.: The Laryngoscope Co.

This is a valuable addition to the early history of medicine. It is written interestingly, and the data is so given as to allow the reader to draw his own conclusions, beside giving the author's own views regarding them. Beginning as it does with the earliest known inscriptions and manuscripts, it continues through the various evolutionary stages of the science of medicine down to the present time. While the author professedly deals specially with the history of medicine as related to the nose and throat, there are, nevertheless, numerous references which make the book interesting to the general practitioner. It would be hard to believe that the science of medicine should have sprung spasmodically to the high degree of excellence in which we find it, as described by Hippocrates, without having passed through a long, evolutionary process. The author's references to the early Egyptian physicians, together with our general knowledge of the influence exerted by the Egyptians over the Greeks in other lines, lead us to believe that the evolution was not lacking after all. Doubtless in the destruction of the great Alexandrian library which the author describes in detail many early and valuable treatises on medicine were destroyed.

However, the fame of Hippocrates is not to be belittled. "Never since in the history of the world have there existed in the space of one man's life so many men whose fame still shines in mortal records and whose words still influence the thoughts of men. . . . None can say that the great name of Hippocrates stands less illustrious on the roll of medical science than does that of Socrates in philosophy, of Phidias in sculpture, of Demosthenes in oratory, of Thucydides in history, or of Aristotle in science." Considering his work, "all his writings . . . testify to the persistence with which he studied the symptomatology rather than the pharmacology of disease." As to his love of truth, a quotation from Plutarch says that "he confessed publicly that he had mistaken the nature of the sutures of the skull, and has left an acknowledgment under his own hand; for he thought it very unworthy of a man of his profession not to discover where he was in the wrong, seeing that others might suffer and err by his authority."

In the description of Galen and his time, we are reminded of our great indebtedness to this tireless worker for our knowledge of anatomy. While "it would have been manifestly impossible for any one man to have himself originated the discovery of one-tenth part of the new anatomical facts as met with in Galen for the first time," nevertheless he is the real author of many of them.

In this book we read how fanaticism, superstition and mysticism are in continual conflict with the scientific advancement of medicine, and proper tribute is paid to the men whose lives were spent in the promotion and advancement of medicine as a profession. The various discoveries, the correction of errors, the invention of various instruments and devices to aid the diagnosis and treatment of disease, all are aptly described. Through it all we see how the truth regarding the practice of medicine gradually emerges through the enshadowing clouds until it reaches its present stage of progress toward perfection.

Those who have not given the subject special attention will be interested to learn that the work of laryngologists began before the times of Hippocrates, and that the three to six weeks' courses devoted to this subject by many of the post-graduate schools are hardly sufficient to make full-fledged specialists. Hippocrates describes an excellent treatment for fracture of the nose by raising the bones and inserting hollow wooden tubes in the nostrils to keep them in position. He also had an idea of intubation of the larynx for croup, though it is probable that he never practiced it, but his method of removing polypi, which was mentioned by Voltolini in his text-book, 1890, is one of the most striking illustrations of the absence of anything new under the sun. Indeed, Hippocrates described various methods of performing this operation, some of which are practiced at the present time.

Alcmæon, 520 B. C., by his dissections, discovered the eustachian tube. Celsus had definite views about the treatment of diphtheria and ozena, most of which have, however, been long since abandoned. Areteaus, who lived shortly before the birth of Galen, A. D. 131, wrote a very interesting chapter on diseases of the uvula, but felt helpless in the presence of diphtheria and criticised the operation of laryngotomy, which had been recommended to alleviate the dyspnea caused by the disease, though Asclepiades approved of the operation.

Galen wrote a book on the formation of the voice, and incidentally discussed the therapeutics of diphtheria.

Tracheotomy was familiar to the Egyptian practitioners of the Tenth Century. Albucasis, one of the early Egyptian surgeons, describes a cure for postnasal tumor. Fabricus, about the year A. D. 1590, recommended cauterizing ulcers in the nares through an iron canula, and Dionis, A. D., 1707, gives several illustrations of the instruments that he employed for this purpose. Fabricus Hildanus, 1646, employed a powder blower in the treatment of diseases of the throat, and when this method did not suffice, advised removal of a part of the uvula with scissors, ligature or caustic. He also gives illustrations of several instruments for applying the ligature and of forceps for the removal of nasal polypi.

So on, down through the ages, we find numerous references to nasal and laryngeal surgery and medicine; some crude, indeed, but others quite as good as some of the methods that are adopted to-day.

LIFE AND CORRESPONDENCE OF HENRY INGERSOLL BOWDITCH. by V. Y. Bowditch, A.B., M.D. In Two Volumes. Vols. I and II. Cloth. Pp. 337 and 397 Respectively. Price, $5.00 net. Boston and New York: Houghton, Mifflin & Co. 1902.

There is always a stimulus in reading the life of a great man, especially if, as in this instance, the true inner life—the man himself, his ambitions, his fear, his successes, his failures—is depicted. While Dr. H. I. Bowditch, in his time, was one of the leading physicians of Boston (he always eschewed surgery), he was better known in his early professional life as a leader among the abolitionists. He took up the anti-slavery cause at the very beginning, when it was unpopular, even in Boston, to do so, and no one was more aggressive in the cause than he. It is not to be wondered at, then, that the greater part of the book is devoted to this phase in his career, much as we might have wished it were otherwise and that more of the volumes had been given up to the medical side of his life.

The major part is in the form of private letters and extracts from his journal and diary and from unpublished manuscripts, public utterances and publications. While so much of the work is taken up with matters not of special interest to medical men as such, there is enough of that which pertains to the man as a physician to make it of medical interest also. Dr. Bowditch was lucky in being able to follow up a good grounding in medical education in this country, at Harvard, by two years of post-graduate work in Europe, most of the time in Paris. His life there is autobiographical in character, being in the form of descriptive letters and matter taken from his diary. While in Paris he was a favorite pupil of Louis, and had as fellow students Oliver Wendell Holmes, James Jackson, Jr., and Mason Warren. While in Paris he met and fell in love with an English girl, who later became his wife. This was a cause of much anxiety on the part of his father, and the conflict between duty to and respect for his father's wishes and love for the girl was a severe one and lasted for a long time, but finally ended happily for all concerned. Dr. Bowditch was greatly interested in the American Medical Association, believed in the broadening effect of its annual meetings, "and frequently spoke of the influence for good which the friendship thus formed had on his life." As a member of the Association he preached liberality in regard to the code. He was elected President of the Association in 1876, and presided at the Chicago meeting the year following. He was an early and ardent advocate of medical education of women, and did as much as anyone to put down the prejudice against their admission into the medical ranks. He was one of those who succeeded in having created the Massachusetts State Board of Health—the first of its kind, we believe—and was its first chairman. He was also a member of the first National Board of Health, created in 1879. In many other ways his works prove him to have been a public-spirited physician, unselfishly and courageously working for all that, in his opinion, would benefit his profession and the public.

A son has presented to us in a simple manner the life and work of a noble father, a man who was loved for the good he did, as well as for the nobleness of his character.

The volumes contain several excellent photographs and other illustrations.

A MANUAL OF MEDICINE. Edited by W. H. Allchin, M.D., Lond., F.R.C.P., F.R.S. Edin., Senior Physician and Lecturer on Clinical Medicine, Westminster Hospital. Vol. IV. Diseases of the Respiratory and of the Circulatory Systems. Cloth. Pp. 493. Price, $2.00 net. New York: The Macmillan Co. 1902.

This fourth volume of Allchin's manual contains the diseases of the respiratory and circulatory systems. The authors' names, which are a guarantee in their way of the merit of the articles, are Drs. J. Mitchell Bruce on diseases of the heart and blood vessels, Dr. Francis de Havilland Hall on diseases of the pleura, Dr. Leonard Hill on physiology of respiration and circulation, Dr. Hector MacKenzie on diseases of the lower respiratory tract, Dr. Lewis Smith on disorders of the upper respiratory tract, and the editor on disorders of the diaphragm and dropsy. While the book in its treatment of the subjects is often brief, yet the articles are of a quality that can not be criticised, and the illustrations, skiagraphs, etc., are well selected and instructive. The volume seems to us to keep up the reputation of the work as a whole to its full extent.

THE ISLE OF CONTENT, and Other Waifs of Thought. By George F. Butler, M.D. Cloth. Pp. 142. Price, $2.50. Concord, Mass.: The Erudite Press. 1902.

Dr. Butler is well known as a writer of one of the best text-books on materia medica and as a medical writer of more than usual merit, as well as the editor of a semi-popular magazine which has deservedly met with commendation from the profession and others. In this volume he has collected a number of little essays and bits of poetical prose, with one or two more lengthy contributions in verse which have appeared during the past few years. They are brought out in excellent style on a fine quality of paper with broad margins. The only criticism we want to make is that there is too much blank space in the book that we wish might have been filled with a like quality of matter.

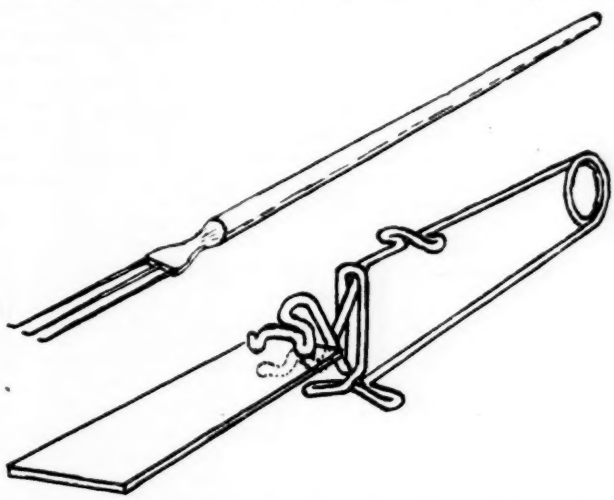
New Instrument.

SECTION LIFTER AND SLIDE FORCEPS FOR THE PATHOLOGIC LABORATORY.

CHESTER J. STEDMAN, M.D.
ASSISTANT PATHOLOGIST, BALTIMORE MEDICAL COLLEGE.
BALTIMORE.

For the laboratory man who has five or six hundred histologic or pathologic sections to stain every day, the old method of changing the sections from dish to dish with a single needle is a rather tedious process; especially so in the case of those solutions in which the sections may remain for only a few moments. With such solutions the stainer must either take time to run his sections through in lots of half a dozen or run the risk of exposing some of them to overaction of the solution by putting some fifty or sixty in the dish at one time, and depending on his ability to capture them all with his single needle before some of them are spoiled by the solution.

After considerable experience in staining up sections for large classes, it seems to me that the work can be greatly facilitated by using a lifter with several points instead of one. With this idea in mind I have devised a little instrument, which consists, practically, of three needles mounted in one handle. With an instrument of this kind sections can be handled much more rapidly and accurately than by the old single needle



method. Fifty sections can be run through a solution at one time quite as safely and quickly as ten could be handled with a single needle. These statements are founded on practical experience, and I trust that other laboratory men may find this little instrument a useful addition to their staining outfit.

The other instrument is a slide holder, or forceps, intended for holding microscope slides during the staining process. The chief drawback connected with all other slide holders which I have seen lies in the fact that, at some point or other, the wire from which the holder is made comes in contact with the edge of the slide, and thereby acts as a conductor which the staining fluid readily follows over the edge, to drop down on whatever may lie below. Such slide holders not only waste staining fluid, but are very objectionable from the standpoint of cleanliness. More than that, most of the holders are structurally deficient in that they do not hold the slide perfectly level.

In view of the foregoing facts I have worked out a slide holder which I believe to be a decided improvement over anything of the kind heretofore in use. It is cheap, consisting of a single piece of bent wire; it holds the slide perfectly level when resting on the table; and, best of all, the wire in no situation lies in contact with the edge of the slide, to act as a conductor for the staining fluid. The slide is held firmly between four points of wire, two above and two below, and with ordinary care in handling the cohesive properties of the staining fluid will effectually prevent its passage over the edge of the slide.

Miscellany.

All That Is Necessary.—The American Association for the Advancement of Science says the following lines are all that is necessary for the physician to learn in order to prescribe in the metric system: 1,000 milligrams make 1 gram. 1,000 grams or cubic centimeters make 1 kilo or liter. 65 milligrams make 1 grain. 15½ grains make 1 gram. 31 grams make 1 ounce, troy.—*Med. Review.*

The American Pharmaceutical Association, at its fiftieth annual meeting in Philadelphia in September, passed a resolution that hereafter the metric system of weights and measures should be used in all papers read before the association and that pharmaceutic journals should be requested to use the same system wherever practicable in their publications. Another resolution passed stated that it is desirable that the pharmacist discourage the refilling of prescriptions unless ordered to do so by the prescriber. After a discussion in the scientific section relative to the advisability of retaining methyl salicylate, artificial, in the pharmacopeia, it was decided that it should be retained, but that it should not be named synthetic oil of wintergreen. It was also decided that oil of wintergreen obtained from *Gaultheria procumbens* should be known as "oil of wintergreen" and that oil of *Betula lenta* under its proper title should be introduced into the pharmacopeia. We quote the following from the address of the retiring president, Henry M. Whelpley (the complete report appears in the *Pharmaceutical Era* of September 18): "I hope that an increasing number of American Pharmaceutical Association members will attend the coming annual meetings of the American Medical Association. We are not likely to overestimate the importance of conjoint work in the two callings which go to make up the healing art and the art of preparing healing appliances. The more we mingle with each other the better we will understand the feelings that actuate those who are striving for the common good of medicine and pharmacy.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

THE NEXT PHARMACOPEIA.

ALBANY, TEXAS, Feb. 9, 1903.

To the Editor:—Will you kindly inform me when the new edition of the U. S. Pharmacopeia will be issued? If you can do so through your columns please give me the name of the publisher.

H. L. WILDER.

ANS.—The revision of 1890 appeared in 1893, published by the committee on revision, through P. Blakiston's Son & Co., Philadelphia, at $2.50. The revision of 1900 is looked for before the end of the present year.

MISSISSIPPI RIVER EXCURSION TO NEW ORLEANS.

PHILADELPHIA, Feb. 6, 1903.

To the Editor:—I wish to ask if it is likely that any arrangements will be made to go down the Mississippi river by steamer. This is a trip that I have for many years desired to take, and now seems the opportunity to take it while going to New Orleans to attend the Association meeting in May. My idea would be to go down the Mississippi river by steamer, either from St. Louis or Memphis; but I would wish to return to Philadelphia by all rail. I will be pleased to avail myself of the information that you will gather for the profession, so far as it will go to meet my plans; further than that I will make independent inquiries.

C. F. TAYLOR

NOTE.—This suggestion is worth the consideration of those interested.

MEDICAL PRACTICE QUERIES.

OTTOSEN, IOWA, Feb. 10, 1903.

To the Editor:—Please inform me as to the requirements to practice medicine in South Dakota and Colorado; also the names of the secretaries of each of the above state boards, with addresses.

W. M. SHIPLEY.

ANS.—In South Dakota an approved diploma, and evidence of good habits and moral character are required. The secretary of the board of examiners is Dr. T. W. Moffitt, Deadwood. In Colorado an approved diploma or an examination is required. The secretary of the board is Dr. S. D. Van Meter, Denver. A new law stricter in its requirements is before the legislature, and has passed the lower house.

GRAND LEDGE, MICH., Feb. 10, 1902.

To the Editor:—Can you inform me as to the necessary qualifications for a physician to practice in Oklahoma, as to board of registration, etc.? E. M. PAINE.

ANS.—An approved diploma is required. Address Dr. C. E. Cowdrick, Enid, Okla., president of the board of health.

State Boards of Registration.

The District of Columbia Board of Medical Supervisors held an examination at Washington, D. C., January 8, 1903. Dr. Wm. C. Woodward, secretary, reports as follows: Number of subjects examined in, 17; total number of written questions, 80; percentage required to pass, 75; partly oral and partly written examination; total examined, 11; passed, 10; failed, 1.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
350	R.	College of P. and S., New York	1902	83.18
351	R.	National Univ., Washington, D. C.	1900	
352	R.	National Univ., Washington, D. C.; Woman's Med. Coll. of Pennsylvania	1900 1901	*83.00 86.90
355	R.	Keokuk Medical College	1892	75.43
353	R.	Columbian University	1901	85.50
356	R.	Columbian University	1902	86.93
358	R.	Columbian University	1899	79.34
359	R.	Columbian University	1902	80.28
361	R.	Columbian University	1902	84.56
360	R.	Johns Hopkins University	1897	88.40

FAILED.

341	R.	National Univ., Washington, D. C.	1902	69.68

WITHDREW.

357	R.	Medical College of Virginia	1881	.....

* Third examination.

Ohio.—The State Board of Medical Registration and Examination of Ohio, by Dr. Frank Winders, secretary, reports the examination held at Columbus, Dec. 9, 10 and 11, 1902, as follows: Number of subjects examined in, 9; questions, 90; percentage required, 75; written examination; examined, 32; passed, 28; failed, 4.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per Cent.
137	R.	University of Pennsylvania	1902	90
142	R.	University of Illinois	1901	96
154	R.	University of Illinois	1901	88
138	R.	University of Michigan	1901	93
141	R.	University of Michigan	1902	93
148	R.	University of Michigan	1901	91
151	R.	University of Michigan	1896	91
163	R.	University of Michigan	1887	†77
168	R.	University of Michigan	1872	*76
169	R.	University of Michigan	1890	82
139	R.	Rush Medical College, Chicago	1902	90
140	R.	Rush Medical College, Chicago	1902	81
149	R.	Rush Medical College, Chicago	1902	89
150	R.	Rush Medical College, Chicago	1902	90
143	R.	Edinburgh University (Scotland)	1887	94
144	R.	National Medical University, Chicago	1901	81
146	R.	Medical College of Ohio, Cincinnati	1902	84
147	R.	Medical College of Ohio, Cincinnati	1899	91
166	R.	Medical Coll. of Indiana, Indianapolis	1892	92
153	R.	Harvard Medical School, Boston	1901	89
158	R.	Harvard Medical School, Boston	1902	87
155	R.	Illinois Medical College, Chicago	1902	84
156	R.	Cleveland Coll. of Phys. and Surgs.	1902	73
157	R.	Cleveland Coll. of Phys. and Surgs.	1898	83
159	R.	Ohio Medical University, Columbus	1902	*75
161	R.	Trinity Medical College, Toronto	1901	88
162	R.	Detroit Medical College	1896	88
164	R.	Baltimore Medical College	1902	*75

FAILED.

145	R.	Royal University of Science, Claudiopolis, Hungary	1894	66
152	R.	Barnes Medical College, St. Louis	1902	*71
160	R.	Ft. Wayne Medical College, Indiana	1902	*64
167	R.	Western Reserve University, Cleveland	1886	*50

* Second examination.
† Third examination.

Medical Organization.

Progress in Nebraska.

Dr. A. D. Wilkinson, secretary of the Nebraska State Medical Society, writes that already thirty-two counties have reorganized and adopted the Constitution and By-laws for

County Societies, and ten or fifteen more counties are expected to be in line within the next few weeks. On February 10 the Omaha Medical Society reorganized as the Douglas County Medical Society and adopted the official constitution and by-laws.

Fillmore County (Neb.) Medical Society.

On January 28, at Geneva, this society was reorganized on the lines suggested by the American Medical Association, with the following officers: Dr. B. B. Mozee, Geneva, president; Drs. John W. Archard, Grafton, vice-president, and Dr. C. F. Morsman, Strang, secretary and treasurer.

Belmont County (Ohio) Medical Society.

At the January 7 meeting, held in Bellaire, Dr. James C. M. Floyd, Steubenville, state councilor, presented the subject of reorganization, after which the society, after making slight amendments to meet local needs, unanimously adopted the constitution and by-laws suggested for county societies by the American Medical Association. The following officers were elected: President, Dr. James G. Wilson, Colerain; vice-president, Dr. Arlington W. Diven, Martin's Ferry; treasurer, Dr. Alfred C. Beetham, Bellaire; secretary, Dr. James S. McClellan, Bellaire; censors, Drs. James O. Howells, Bridgeport, Joseph W. Cooper, Bellaire, and J. C. Archer; delegate to the Ohio State Medical Society, Dr. J. Park West, Bellaire, and alternate, Dr. Brady O'N. Williams, Martin's Ferry.

Societies.

Huntington (W. Va.) Medical Society.—This society met, January 8, and elected Dr. Thomas J. Prichard, president; Dr. Archibald Crary, vice-president; Dr. Isaac R. La Sage, treasurer, and Dr. Thomas W. Moore, secretary.

Chicago Medical Society (Evanston Branch).—This branch society was organized, January 15, by Dr. William A. Evans, president of the county society. Dr. William L. Ballenger was elected president, and Dr. Ernest L. McEwen, secretary.

Vermilion County (Ill.) Medical Society.—At the regular meeting in Danville, February 9, the certificate of the Illinois State Medical Society, accepting the Vermilion County Society as a regularly-affiliated branch, was received and ordered framed.

Gloucester County (N. J.) Medical Society.—At the annual meeting, January 15, Dr. E. Mortimer Duffield, Glassboro, was elected president; Dr. William Brewer, Woodbury, vice-president, and Dr. George E. Reading, Woodbury, secretary and treasurer.

Duval County (Fla.) Medical Society.—At the annual meeting in Jacksonville, January 17, Dr. Sheldon A. Morris was elected president; Dr. John H. Douglas, vice-president; Dr. Jay H. Durkee, secretary and treasurer, and Dr. Columbus Drew, corresponding secretary.

Harrisburg (Pa.) Academy of Medicine.—At the annual meeting, January 30, the following officers were elected: President, Dr. John B. McAlister; vice-presidents, Drs. William J. Middleton, Steelton, and Martin L. Walford; secretary, Dr. Thomas S. Blair, and treasurer, Dr. E. Harold James.

Manila (P. I.) Medical Society.—At the annual meeting, January 6, the following officers were elected: Dr. J. M. Donelan, president, and Dr. W. E. Musgrave, secretary-treasurer. The councilors of the society are as follows: Drs. Paul C. Freer, John R. McDill, John Maye, H. W. Yemans and Frank S. Bourns.

Harlan County (Neb.) Medical Society.—An auxiliary of the state and national medical societies was organized at Orleans, January 21. Dr. William H. Banwell, Orleans, was elected president; Dr. Samuel M. Baker, Alma, vice-president; Dr. Campbell, secretary, and Dr. Dickson R. Waggoner, Stamford, treasurer.

Medical Society of the Missouri Valley.—The spring meeting of this association will be held in Council Bluffs, Iowa, March 19 and 20. The membership of this society includes Iowa, Nebraska, Missouri, Kansas, North and South Dakota physicians. Dr. Charles Wood Fassett, St. Joseph, Mo., is the secretary.

Atlantic County (N. J.) Medical Society.—At the annual meeting held in February, the following officers were elected: President, Dr. Theodore Senseman of Atlantic City; vice-president, Dr. Edmund A. Madden, Absecon; secretary and treasurer, Dr. Edward Guion, Atlantic City, and reporter, Dr. A. Burton Shimer, Atlantic City.

Chautauqua County (N. Y.) Medical Association.—The second annual meeting was held in Jamestown, January 20. Dr. Orrin C. Shaw, Cassadaga, was elected president; Drs. Era M. Seofield, Jamestown, first vice-president; Dr. Vacil D. Bozovsky, second vice-president, and Dr. Henry A. Eastman, Jamestown, secretary and treasurer.

Dawson County (Neb.) Medical Society.—A meeting of the physicians of the county was held at Gothenburg, January 23, at which a medical society was organized with the following officers: President, Dr. Edwin O. Boardman; vice-president, Dr. Barton B. Baker, Lexington, and secretary and treasurer, Dr. P. Emmet Plumb, Gothenburg.

Greene County (Ark.) Medical Society.—At the annual meeting, February 2, held at Paragould, Dr. James W. Johnson, Paragould, was elected president; Dr. E. L. Kennedy, Marmaduke, vice-president, and Dr. Adolphus G. Clyne, Bethel, was re-elected secretary and treasurer. The new constitution and by-laws of the Arkansas Medical Society were adopted.

Chatham County (Ga.) Medical Society.—At the annual meeting held in Savannah, January 7, the following officers were elected: Dr. Marion X. Corbin, president; Drs. J. Lawton Hiers, and George R. White, vice-presidents; Dr. J. Walter Williams, treasurer; Dr. Ralph M. Thomson, recording secretary; Dr. Gustaf H. Johnson, corresponding secretary, and Dr. Elton S. Osborne, librarian, all of Savannah.

Harrison County (W. Va.) Medical Society.—At the regular meeting, held at Clarksburg, February 4, the constitution and by-laws recommended by the American Medical Association and the West Virginia Medical Association for county societies was adopted. The following officers were elected: President, Dr. Thomas M. Hood; vice-president, Dr. S. L. Mason; secretary, Dr. Chester R. Ogden, and treasurer, Dr. Robert A. Haynes, all of Clarksburg.

Douglas County (Omaha) Medical Society.—At the annual meeting in Omaha, January 13, Dr. Harry M. McClanahan, Omaha, member of the House of Delegates of the American Medical Association, presented the general plan of reorganization suggested by that body, and a general discussion of the subject followed. Dr. William H. Christie, Omaha, was elected president; Dr. H. P. Hamilton, Omaha, first vice-president; Dr. F. W. Faulk, South Omaha, second vice-president; Dr. Joseph M. Aikin, Omaha, secretary, and Dr. Millard Langfeld, Omaha, treasurer.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held Jan. 2, 1903.

The President, Dr. John M. Fisher, in the Chair.

Fibromyoma of the Round Ligament.

DR. MELVIN M. FRANKLIN reported a case of fibromyoma of the round ligament in a patient aged 29. The tumor, which was about the size of a walnut, was situated in the inguinal canal, just without the internal abdominal ring. Pressure on the growth caused considerable pain and nausea. The tenderness was markedly increased during menstruation. The periods had always been normal and she suffered with dysmenorrhea.

DISCUSSION.

DR. JOHN C. DACOSTA did not remember having ever had such a case. He had two cases of pure fibroma of the broad ligament.

DR. W. KRUSEN said that such a rare tumor is interesting from a diagnostic standpoint because it may be mistaken for lipoma, ovarian or intestinal hernia or enlarged lymph glands. Another interesting point is that during pregnancy these tumors often increase in size and also during menstruation. This probably indicates their relation to the uterus. The most frequent situation is on the right side.

DR. E. E. MONTGOMERY said that tumors of the round ligament are very rare. We can readily realize that in the round ligament, which contains both muscular structure and blood vessels, there is ample material for the development of this class of tumors, whether we assign their origin to the muscular structure of the round ligament itself or to the muscular wall of the blood vessels. Their infrequency in the round ligament

is readily explained by the fact that the structure is rarely subject to injury.

DR. JOHN M. FISHER said that Dr. Clark, a few years ago, reported a case of coincident sarcoma of the uterus with fibromyoma of the round ligament, demonstrating the importance of making a microscopic examination.

Preliminary Report of an Operation for Abdominal Pregnancy of Twenty-One Months' Standing.

DR. C. P. NOBLE reported the clinical history of this patient, who was a multipara, 30 years of age. She missed her menstrual period in March, 1901. Two weeks later she was taken with a sharp, agonizing pain in the right iliac region, diagnosed by her physician as appendicitis, and was in bed for three weeks. Two months subsequent to the date of expected labor she consulted a gynecologic dispensary where a diagnosis of "tumor" was made, and medicine given "to dissolve it." She remained under this treatment for three months. She was finally sent to the Kensington Hospital for women, Philadelphia, with a diagnosis of fibroid. Dr. Noble made a presumptive diagnosis of abdominal pregnancy and verified the diagnosis by an abdominal section. The fetus occupied the left side of the abdomen, extending into the pelvis; the uterus was pushed to the right and elevated. The round ligament and tube ran over the face of the "tumor." The sac was so thick that it was impossible to outline the fetal parts. The ovarian and uterine vessels on the involved side were ligated, the fetus and sac elevated out of the pelvis and the lower end of the mass turned upward. By getting at the mesentery vessels from below and behind it was possible to control the bleeding without difficulty. The uterus was not removed. The patient made a satisfactory recovery.

DR. E. E. MONTGOMERY spoke as follows: The case presented by Dr. Noble is one of very great interest from a diagnostic standpoint. Everyone who has had an opportunity of observing a large number of patients appreciate the frequency of cases which will come under his observation, where it is difficult to determine whether he has to deal with a pregnancy, fibroid tumor or other abdominal growths. I remember a case which came under my observation years ago at Jefferson Hospital of a woman who had gone fifteen months from the time she conceived without delivery. Two months subsequent to her conception she had what she supposed to be an abortion. There was a discharge of clots of blood and she suffered great pain. A bloody discharge continued for some weeks subsequently. A few months later she recognized fetal life, and again became reconciled to the fact that she was pregnant. At the completion of what should have been the normal period of gestation, however, labor did not occur. At the time the patient came under our observation she presented a tumor which filled the abdomen to nearly the size of a woman at full term of pregnancy. Examination revealed fluctuation while percussion over the tumor gave resonance. On examination per vaginam the uterus could be recognized situated in front and somewhat to the left of the mass. While a portion of the tumor felt solid, one was unable to palpate and recognize distinctly its parts. The history of the case and the conditions present led me to form the diagnosis of ectopic gestation, in which the fetus had undergone maceration and decomposition, and the resonance in the sac was the result of the gas thus formed. On opening the abdomen we found a condition similar to that which I had expected. The uterus was in front of the mass, the tumor occupied the abdomen above and the wall of this tumor was made up of a membranous sac to which the placenta was attached at the upper part. The placenta was without vitality, was easily pulled off with the portion of the sac to which it was attached and without hemorrhage. The entire lining membrane of the sac was covered with macerated material. With the removal of the fetus, the sac was thoroughly cleansed, stitched to the abdominal walls and packed with iodoform gauze. The intestines were closely adherent to it and formed a part of the sac wall, so it was impossible to attempt its removal. The convalescence was slow; patient finally recovered.

The second case which comes to my mind is that of a wife of a physician in the upper part of the state. On examination a tumor was recognized to one side of the uterus, which filled up the pelvis. The history and the examination of the case led me to unhesitatingly pronounce it a fibroid tumor. It had been in existence for two years. The patient was unwilling to submit to operation, became pregnant, and gave birth to a child without interference to the sac, and, so far as I know, she still carries it.

Another patient treated at the Jefferson Hospital is of diagnostic interest. She had a mass which had been pronounced pregnancy by several physicians. One physician, an eminent gynecologist in the city, pronounced this a pregnancy and saw the patient several times during the supposed gestation. The woman, however, did not attain to the size she supposed to be proper, and the time passed beyond which labor should occur. She was brought to the hospital and even then the growth was considered a delayed pregnancy. There was found situated in the vagina a mass the size of a fetal head, so divided as to lead to the belief that the fontanelles could be felt between the masses. On examination over the abdomen a mass could be pushed away and felt to rebound against the hand. This was supposed to be the body of the fetus. In examining this patient, however, I felt satisfied from the surfaces intervening between the vaginal mass and the finger that it could not be within the uterus. If it was a fetus it was evidently situated anterior to that organ. I hardly believed that we would likely find an ectopic gestation in that situation. The sensation of free movement of the upper part was due to the fact that the tumor was connected with the fundus of the uterus by a rather thick, yet flexible, pedicle, which permitted the fundus to be pushed away and to return against the hand. The latter was favored by a considerable amount of ascites. As soon as the abdomen was opened a considerable quantity of fluid was discharged and the mass projected into the wound. A number of fibroid tumors occupied the body of the uterus.

I think these cases indicate the difficulty in diagnosis which will sometimes lead the patient to go for some length of time under the observation of careful men and they be mistaken for other conditions.

DR. W. KRUSEN said: Dr. Noble's interesting case recalls a postmortem which I had in 1893 while a resident at Jefferson Hospital. I had the opportunity, through the courtesy of Dr. Hearn, of making a postmortem in the case of a patient in the northern part of this city. The abdomen had been gradually increasing in size for ten months and no menstruation had been present for that time. The patient had been seen before in consultation by the late Professor Parvin and the condition was such that operation was thought inadvisable. The patient died, and on postmortem there was found within the abdominal cavity a full-sized fetus, larger than the size of a baby a month old. A hematoma occupied the position of the uterus. The head of the fetus was directly under the spleen. The case illustrates the tolerance of the peritoneum to the development of the fetus. This was a case in which undoubtedly rupture had occurred. The hemorrhage had not been such as to produce death and the fetus had gone on to full development, weighing over ten pounds. The specimen is now in the museum of the Jefferson Hospital.

The very interesting and perplexing question to the surgeon is the treatment of the live placenta in cases of ectopic gestation. I have had an opportunity in two cases of having to contend with this difficulty.

DR. C. P. NOBLE in closing the discussion, said: The point raised by Dr. Krusen is of course the crucial one, how to deal with the hemorrhage. These cases are so rare that there are very few of us who have the opportunity to acquire views from practice. This is the first full term pregnancy of this kind that I have ever seen. I have operated on nearly a hundred cases of ectopic pregnancy, but this is the first one advanced beyond the fourth month.

I think it is best to enucleate the whole sac provided one can do preliminary ligation. If the placenta is attached to the intestines we know that we can not do preliminary ligation. On the other hand, if the placenta is in the pelvis we know perfectly well how to deal with the ovarian and uterine arteries

or with the anterior branch of the internal iliac. I should prefer to enucleate the sac under those circumstances. In a case having its blood supply from the mesenteric vessels my own action would be to pack the sac with gauze and leave it.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Cinnamon.

The oil of cinnamon in aqueous solution, according to the *Med. World*, is a splendid local antiseptic and disinfectant. It is recommended as a substitute for corrosive sublimate, as an application to prevent suppuration in recent wounds where stitches have been taken. The points in favor of its use are that it is cleanly, non-toxic and a cheap dressing. It is also used as a douche after parturition when a douche is indicated. Three or four drops of the oil may be added to two quarts of warm water and used as long as there is odor to the lochia.

Shoemaker recommends cinnamon in finely-powdered form, given in doses of one to one and a half drams, as an efficient remedy in acute dysentery. It has some hemostatic properties and is employed in the form of an infusion in milk or the oil may be given on sugar. In the palliative treatment of carcinoma of the stomach it is recommended that 10 or 12 ounces of the bark be placed in three quarts of water and boiled down to one quart, decanted without filtering. One pint of the mixture should be drunk every 24 hours.

In gonorrhea it may be used as follows:

℞.	Olei cinnamomi	m. i-iii	06-20
	Liq. petrolati	ʒi 30	

M. Sig.: Cleanse the urethra with dilute hydrogen dioxid and inject the cinnamon solution. One drop of the oil of cinnamon to the ounce should be used the first day, gradually increasing to three drops.

As an antiseptic dressing in the form of an ointment the following have been recommended by M. Championniére:

℞.	Retinol	ʒix	35
	Ceri (sterilized)	ʒiii	12
	Cinnamol	m. viiss	50

M. Sig.: Apply locally.

Retinol is a product of the destructive distillation of resin and is frequently employed as a solvent for different preparations as iodol, camphor, cocain, codein, creosote, etc. Cinnamol, according to Shoemaker, is a freshly-distilled essence of cinnamon.

℞.	Cinnamol	m. viiss	50
	Ceri steril.	ʒiii	12
	Beta-naphthol	gr. viii	50
	Retinol	ʒix	35

M. Fiat unguentum. Sig.: Apply locally; or:

℞.	Ess. geranii	m. xv	1
	Ess. cinnamomi	m. viii	50
	Retinol	ʒiss	45

M. Sig.: To be applied locally; or:

℞.	Ess. thymi	m. xii	75
	Ess. geranii	m. xii	75
	Retinol	ʒiss	45

M. Sig.: Apply locally.

Acute Coryza.

Sternberg, in an abstract in the *Month. Encyc. of Pract. Med.*, calls attention to a simple treatment which is a revival of an old method. It consists in eliminating liquids from the diet for twenty-four hours in order to dry up the secretions and relieve the congestion in the head, nose, conjunctiva and the irritating discharge from the nose. If the treatment is continued for two days the coryza will usually be brought to an end, and it will not usually be followed by a cough. The treatment is regarded as a prophylactic against otitis media or the extension of inflammation into the adjacent nasal cavities.

The treatment must be begun early in order to make it a success. The presence of fever is no contraindication to the treatment, but it should not be carried out when chronic nephritis is present.

Dandruff.

The following outline of treatment is recommended by *N. Y. Med. Jour.* in the treatment of dandruff:

℞.	Olei bergamot	gtt. ii	12
	Ung. hydrarg. oxidi rubri	ʒiv	15
	Adipis benzoinati	ʒiss	45

M. Fiat unguentum. Sig.: Apply locally; or:

℞.	Sodii boratis	ʒii	8
	Glycerini	ʒiii	12
	Aquæ q. s. ad	ʒv	150

M. Fiat lotio. Sig.: Apply locally.

Where there is some constitutional disturbance the following mixture may be employed:

℞.	Vini ferri	ʒiss	45
	Liq. potassii arsenitis	ʒi	4
	Syr. simplicis	ʒiii	12
	Aquæ q. s. ad	ʒiv	120

M. Fiat mistura. Sig.: One teaspoonful to be taken after each meal.

Typhoid Fever.

W. R. Perry, in an article in the *Amer. Pract. and News*, states that he has obtained unusually good results from the use of the following antiseptic combination:

℞.	Tinct. iodi	ʒiss	6
	Acidi carbol.	ʒss	2
	Spts. chloroformi	ʒii	8

M. Sig.: Two to four drops every three or four hours.

Dysphagia in Acute Anginas.

Le Prog. Med. recommends the following to relieve the pain in swallowing in the acute anginas:

℞.	Pulv. talci		
	Pulv. acid borici, āā	gr. xlv	3
	Orthoformi	gr. xv	1
	Cocainæ hyd.	gr. 3/4	05
	Pulv. menthol	gr. 1/3	02

M. Fiat pulvis. Sig.: A small amount to be insufflated into the throat through a glass tube just before eating.

[The foregoing combination is of service in any condition where disease of the throat or larynx is accompanied by pain on swallowing food. But it should be prescribed and used strictly under the care of the physician on account of the orthoform and cocain it contains.]

Croup.

L. Lozansky, in *Merck's Archives*, recommends the use of creosotal in croup, measles, and whooping cough. He usually begins with large doses and continues with reduced doses after apyrexia sets in, in order to prevent relapse. The following formula is employed by him:

℞.	Infusi ipecac.	ʒiss-ʒiii	45-90
	Sol. ammon. anis.	m. xv-xxiv	1-1 65
	Creosotal	m. xlv-lxx	3-5
	Syr. senegæ	ʒiv	15

M. Sig.: One teaspoonful every half hour for four doses, then every hour, and finally every three hours. When the temperature ranges high the following combination is recommended:

℞.	Sodii salicylatis	gr. xv-xxx	1-2
	Creosotal	m. xlv-lxx	3-5
	Emuls. amygd.	ʒiii	90
	Syr. ipecac.	ʒiv	15

M. Sig.: One teaspoonful every half hour for four doses, then every hour, gradually increasing the interval.

Clinical Use of the Iodids.

Wild, in an abstract in the *Internat. Med. Mag.*, states that both clinically and experimentally the sodium salt has proved less toxic than the potassium. He states that the two chief objections to the potassium salt are the liability to cause iodism and the marked depression it produces.

The sodium salt should be substituted when symptoms of iodism make their appearance, otherwise the potassium should

be stopped. He regards the depressing effect of the potassium to be overdrawn as ordinary food contains a considerable amount of the potash, especially the vegetable diet. To counterbalance the amount of potassium, the vegetable portion of the patient's diet can be cut down, and milk, eggs, fish and meat added.

Urethritis.

The following combinations are recommended by Brunton in the treatment of gonorrheal urethritis:

℞.	Calaminæ prep.	3ii	8
	Zinci oxidi	3ii	8
	Liq. plumbi subacetatis	3i	4
	Glycerini	3i	4
	Aq. calcis q. s. ad	3i	30

M. Fiat mistura. Sig.: To be used locally as an injection.

[It will be noted that the amount of zinc and lead preparations is large.]

Or:

℞.	Zinci sulph.	gr. i	06
	Zinci acetatis	gr. i	06
	Tinct. catechu	m. x	65
	Ext. opii fluidi	3ss	2
	Aq. destil. q. s. ad	3i	30

M. Sig.: As an injection; or:

℞.	Zinci sulphocarbol.	gr. iv	25
	Aq. destil. q. s. ad	3i	30

M. Sig.: To be used as an injection.

Nocturnal Incontinence of Urine.

The following, according to an abstract in the *N. Y. Med. Jour.*, is recommended in the treatment of nocturnal enuresis:

℞.	Syr. belladonnæ	3i	30
	Antipyrini	3iiiss	14
	Syr. tolutani	3iss	45

M. Sig.: One teaspoonful morning and evening. Increase the dose to two teaspoonfuls if the incontinence persists.

The foregoing, according to the author, is Trousseau's formula, to which is added antipyrin. The following, containing camphor and ammonium valerianate, is also recommended:

℞.	Ext. belladonnæ	gr. 1/6	01
	Camph. bromidi	gr. iss	09
	Ammon. valerianatis	gr. 3/4	05

M. Ft. pil. No. i. Sig.: One such to be taken at bedtime; or:

℞.	Ext. rhois arom.	gr. xxxviiss	2 50
	Ammon. valer.	gr. x	65
	Syr. menthæ	3v	150

M. Sig.: Two teaspoonfuls morning and evening; or:

℞.	Tinct. rhois rad.	3ii	8
	Calcii glycerophos.	gr. xxiiss	1 50
	Ferri glycerophos.	gr. xxiiss	1 50
	Syr. pruni virg.	3x	300

M. Sig.: One dessertspoonful on rising and at bedtime.

F. T. Hopkins, in the same periodical, states that the treatment in debilitated children is a general tonic one, consisting of strychnia, arsenic, cod-liver oil, good food, cold sponging and static electricity. The employment of atropin gr. 1/100 (.0006) to gr. 1/75 (.0008), or belladonna gr. 1/4 (.015) to gr. 1/2 (.03) of the extract is advised by him.

He also recommends the passing of sounds. Any disturbance of the digestive tract should be corrected, and where constipation exists, forcible dilatation of the sphincter ani is recommended. Proper exercise should be prescribed, and the patient should be aroused at eleven o'clock at night to urinate. Any constitutional disturbance such as syphilis, tuberculosis and diabetes should be properly treated.

Brunton states, in the treatment of incontinence of urine, that we must consider the action of two different organs, the sphincter at the neck of the bladder and the fundus of the bladder, the one tends to hold the urine in the bladder and the other tends to expel the urine, so that if the sphincter is insufficiently stimulated it will remain more or less lax, and consequently will permit the urine to run out. Stimulating this sphincter, then, will stop the incontinence. Belladonna, according to him, lessens the irritability of the fundus without affecting the sphincter, so the expulsive tendency is lessened and the incontinence is frequently cured. The preparation must be pushed to its limit, as noted by the dilated pupil and the dryness of the mouth. Cantharides is also recommended by him, as it tends to stimulate both the fundus and the sphincter of the bladder.

Medicolegal.

What Physician Making Examination May Testify To.—There was some objection urged to the evidence of a physician in the personal injury case of Meeks vs. the Ohio River Railway Company because he testified as to what the party suing and her attending physician told him. He was not being strictly examined as an expert, but was being interrogated with regard to a personal examination made by himself as to the condition of the party suing. Of course, says the Supreme Court of Appeals of West Virginia, it was improper for him to state to the jury what the party suing or her attending physician told him as to her condition. But he had the right, being a physician, to testify as to his personal examination, made in the manner in which physicians usually diagnose a case; and this is not only by actual examination of the organs and limbs of the patient, but inquiry as to the symptoms, pains and otherwise. Therefore, the jury was properly instructed to disregard as independent evidence the statement made by the party suing and her attending physician to the witness, but there was no error in permitting the opinion of the witness, together with his sources of knowledge, to go to the jury, to be considered by them.

Competent Evidence of Physician's Account.—The case, taken to the Supreme Judicial Court of Massachusetts, of Mayberry vs. Holbrook was brought by a physician to recover for 126 professional calls. At the trial, with his books before him, he testified on his examination in chief that he had made that number of calls. On cross-examination he testified that he did not keep the run of these calls in his memory, and that without looking at the books he could not tell about their number. It did not appear that the books were put in evidence. The party sued denied that any calls were made, and asked a ruling that, on all the evidence, the physician could not recover. The judge refused so to rule. On the point involved, he instructed the jury: "I am reminded by counsel that he does not desire to admit that the services were rendered as charged, and it is said that the plaintiff [the physician] having testified that he could not now state from memory, independent of his books, that he did render services as charged in the bill, but he states that he did render them as charged in the bill; he also states that in making that he relies on his books. He does not state that the books refresh his recollection, so that he can now have a distinct recollection of all those items, but that is not necessary. If the books enable him to say, on his oath, that the fact was as the books have it, that would be sufficient . . . if, from the plaintiff's method of keeping the books, he is able to say from the entries, as he inspects them, that the facts are as there entered, that is competent evidence, and it is only for you to say what its weight is." The Supreme Judicial Court holds that the instructions were correct and applicable, and overrules the exceptions of the party sued, the physician having had judgment.

Care Required—In Operation and After—Leaving Sponge—Limitations.—In the case of Gillette vs. Tucker, as it is entitled in the Supreme Court of Ohio, an action brought by the latter party, the "Syllabus by the Court" is: A surgeon and physician, employed to treat a case professionally, is under an obligation, which the law implies from the employment, to exercise the average degree of skill, care and diligence exercised by members of the same profession, practicing in the same or a similar locality, in the light of the present state of medical and surgical science; and that he will indemnify the patient against any injurious consequences which may result from his want of ordinary skill, care and attention in the execution of his employment. It is the duty of the physician and surgeon to exercise due and

ordinary skill, care and attention, not only in and about an operation which he decides to be necessary, but also, in the absence of a mutual understanding or notice to the contrary, to render such continued further care and treatment as the necessity of the case requires; and he is liable for injuries and damages which proximately result from the want of such ordinary skill, care and attention. Where the physician and surgeon so engaged operates on the patient for what (as in this case) he pronounces to be appendicitis, and neglects or carelessly forgets to remove from the abdominal cavity a sponge which he had placed therein, and closes the incision, with the sponge remaining therein, and this condition continues during his entire professional relation to the case and is present when he abandons or otherwise retires therefrom, the statute of limitations does not commence to run against a right to sue and recover on account of such want of skill, care and attention until the case has been so abandoned, or the professional relation otherwise terminated. It is stated, in the opinion, among other things, that the mere closing of the incision in question over the sponge was not the party's cause of action, if no injurious consequences followed. But if evil consequences followed, and she was injured, her cause of action accrued when her injuries occurred; and if these injuries blended and extended during the entire period the surgeon was in charge of the case, her right of action became complete when the surgeon gave up the case without performing his duty. It would be inconsistent to say that the party might sue for her injuries while the surgeon was still in charge of the case, and advising and assuring her that proper patience would witness a complete recovery. The facts in the case showed a continuous obligation so long as the relation or employment continued, and each day's failure to remove the sponge was a fresh breach of the contract implied by the law. The removal of the sponge was a part of the operation, and in this respect the surgeon left the operation uncompleted. A judgment of the Circuit Court, granting the party suing a new trial, after a verdict had been directed against her, on the ground that her cause of action was barred by the one-year statute of limitations of Ohio for actions for malpractice, is affirmed, or, more strictly speaking, left to stand, the Supreme Court being equally divided. In the dissenting opinion it is maintained that the injury was permanent and complete so far as the surgeon's agency and liability were involved when he closed the wound and did not remove the sponge. If any injury whatever ensued from delay in discovering and removing the sponge, it was merely incidental and consequential to the principal act of leaving the sponge in the abdomen when the operation was completed. Stated in slightly different language, but the same effect, the charge was that the surgeon permitted the sponge to remain in the abdomen when he closed the incision, and he permitted it to remain afterward as long as he attended her. In this way of stating the case, it is clear that the wrong inflicted was complete on the day of the operation, and the cause of action then accrued, unless the surgeon was to be held liable in another cause of action for not knowing or not discovering that the sponge was there. But this could not be, for whatever injury the party suing suffered was the result of, or consequential to, the wrong inflicted in the beginning, and hence a recovery for that would be a bar to a recovery for the other.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

February 7.

1 *Theory and Practice of Spinal Cocainization. G. K. Dickinson.
2 *Essential and Paroxysmal Tachycardia. J. J. Morrissey.
3 *Hemorrhagic Appendicitis as the First Manifestation of Purpura Hemorrhagica. *Nathan Jacobson.
4 Subcutaneous Abscesses Due to the Gonococcus, in a Child Two Years of Age. Milton A. Gershel.
5 *Imbalance and Insufficiency of the Eye Muscles. R. C. Matheny.
6 *The Maternal Impression Superstition. Edwin T. Kelly.
7 Paraffin Injection in a Case of So-called Saddle-Nose. Francis Alter.
8 The Army Cartridge-Belt. Louis L. Seaman.

1. Spinal Cocainization.—This procedure, which has gone into disfavor to some extent, owing to the conservative views of Bier and others, is discussed by Dickinson, who points out the anatomy of the parts involved, the details of the resistance of the tissues and technic of operation. Of course, great importance must be laid on the purity of the cocain, the asepsis and technic. He considers that the method of lumbar puncture is an art, and experience is necessary. The surgeon attempting it for the first time will possibly have to make several trials before success, and then perhaps fail in the end. Generally a needle will enter jumping through the ligamentum subflavum with a sense usually appreciated by the finger, entering at a point a little less than one-quarter of an inch below and one-half inch to the right of the spinous process selected. If it passes a little too far to the right, the fibrous tissue only of the transverse process will be punctured and a sense of continuous interference felt, and perhaps no fluid flow. Once in the canal, fluid generally comes, but at times must be started by a cough or straining effort. In later operations about twice the amount is allowed to escape as is thrown in. It will take years of careful work to ascertain absolutely the possibility of harm. Cardio-respiratory phenomena are the dangers to be apprehended, and if it can be shown in time that the risk is sufficiently minimized, it will prove the true value of the method. Possibilities of the blocking of the centers of the medulla are certain, if large doses are given, but half a grain seems hardly sufficient to induce alarming symptoms in the adult. The danger of infection is an idle objection to the careful surgeon. To sterilize a solution without destroying it, the plan suggested and carried out by Van Horne of New York is to make a 2 per cent. solution in sterile water, and put 25 minims into small glass capsules. This is exposed to a temperature of 176 for four hours for four successive days, which renders the solution safe surgically and does not influence the drug effect. Idiosyncrasy is a point that must give us most concern, but it exists not only to this, but to other methods of anesthesia. Dickinson says that cocain analgesia is to be preferred to ether in all cases in which the patient will not have to be over-much mentally disturbed by the time and surroundings. No meals are lost and no metabolic changes are induced.

2. **Tachycardia.**—Morrissey defines tachycardia not as simply heart hurry, but as a species of rapid heart, depending on causes within the heart itself, or produced by other causes more or less removed from the cardiac region. There are certain peculiarities which distinguish true tachycardia from evanescent heart hurry: 1. The attack is sudden and reaches its height almost immediately. 2. The patient may or may not be entirely unconscious of the great degree of palpitation. 3. There is generally a definite period covered by the attack. 4. The reversion to the normal condition is as sudden as the onset. He does not regard temperature elevation as of any special significance. From a clinical point of view he would classify tachycardia as short and long. The first is accompanied by vertigo, epigastric distress and at times a sensation of cardiac expansion. There is no discoverable cause, and the symptoms are mainly subjective. A long attack may cover a period of years to the great distress of the patient, and it may result in death. He reports two cases which he considers typical: one produced by myocardial degeneration and another by profound shock to the nervous system. He discusses the subject of reflexes of this class at considerable length and considers that there are probably many causes from which tachycardia originates. Its pathology is not yet clear. The treatment is the treatment of the condition from which it arises or with which it is associated. He has treated cases and found relief in the use of convallaria where digitalis failed, and others where convallaria failed; so he is skeptical of its action. In the third case, which may be described as coming within the lower range of tachycardia, there was marked arterial tension with decided neurasthenic leanings. He gave bromid potassium for its sedative effect and the iodid for its action in dilating

the peripheral arterioles, reducing the tension and rendering the work of the heart less arduous. In conclusion he speaks of bradycardia and its significance, and remarks that every heart is a law unto itself and the producing of snap diagnoses in cardiac disease is to be condemned.

3. **Hemorrhagic Appendicitis.**—Jacobson reports a case with appendicular symptoms in which operation relieved the intestinal hemorrhages in the appendix, which was enlarged and decidedly inflammatory in appearance. After the operation there was more trouble. Blood expectoration continued, there were petechiæ and a hacking cough. The patient recovered under the administration of suprarenal extract. He considers the case clearly one of purpura hemorrhagica in which the first evidence was hemorrhage into the appendix. There were petechiæ of the limbs and abdomen appearing within four or five days after operation. If no subsequent symptoms had appeared the case might have been put down as one of appendicitis. In conclusion he notices the literature of similar cases.

5. **Heterophoria.**—This subject is generally discussed by Matheny, who notices the view that serious conditions, epilepsy, etc., may be entirely due to imbalance and insufficiency of the eye muscles.

6. **Maternal Impressions.**—Shelly protests against the medical endorsement in text-books of the possibility of maternal impressions. He considers it a medical anachronism which is a stigma on the profession.

American Medicine, Philadelphia.

February 7.

9 *A Further Note on the Perinephric Fat. W. W. Keen.
10 *The Surgical Treatment of Puerperal Infection. Matthew D. Mann.
11 *Relation of the Innervation of an Organ to the Influence of Suprarenal Extract upon It. S. J. Meltzer and Clara Meltzer.
12 *Methods of Closing the Abdominal Incision. W. D. Haggard.
13 *Feeding of Infants and Children. Frederick J. Mann.
14 *Subsequent Report of a Case of Excision of the Sympathetic for Chronic Glaucoma. Howard F. Hansell.
15 *Hypodermoclysis in Pneumonia, with Report of a Case. Maurice Kahn.
16 *Electrolysis in Eustachian Salpingitis with Stricture: Report of 75 Cases. Ellwood Matlack.
17 Vital Statistics: A Plea for Actuarial Administration and Control of the Great Resources of Preventive Medicine. (To be continued.) John S. Fulton.

9. **Perinephric Fat.**—In a note by Dr. Keen he states that his attention has been called by Dr. Wyllis Andrews to a notice of this anatomical feature by Walkow and Deletzin in a monograph on wandering kidney published in 1899. There seem also to be two references of importance showing earlier descriptions, one by Zuckerkandl in 1883 and one by Gerota in 1895.

10. **Puerperal Infection.**—Mann reviews the various operations suggested for this condition: 1. Curettage, with which he would be cautious. He is dubious as to its value in septic endometritis. The rule should be to do it only when clearly indicated; do it thoroughly, but not roughly or too forcible, and then do not repeat. If one fallopian tube is purulent, it is advisable to have it removed by abdominal incision. One of the most dangerous conditions which he thinks we can meet is the infection of a fibroid tumor or ovarian cyst. The presence of any kind of new growth in a puerperal woman should induce the greatest watchfulness and care. Septic infection in the presence of uterine fibroid, following labor, especially in abortion, should be taken as an indication for prompt hysterectomy. In cases of infected ovarian cyst, it should be removed, as probably also the uterus, though the latter should be governed by the conditions. Mann has not seen cases of ovarian abscess as described by Henrotin, but thinks his paper should be carefully studied by those who meet with such. In case of parametric abscess he is not entirely determined as to how to treat the case. He thinks it is better not to open the abdomen when there is evidence of acute post-operative suppuration. If necessary for diagnosis, open through the vagina; explore and drain, without opening up the healthy peritoneum if it can be avoided, or wait until the abscess gets large enough to show a fluctuating spot in the vagina and then open and drain. If an abscess in the broad ligament should be found on opening the abdomen, it is best to try and open it, with one hand in the abdomen as a guide, either into the vagina or at the groin, and not open it into the abdomen. Exploratory abdominal incision should be the rule, as Hirst says, only when it is the desire to determine if a pelvic mass, presumably suppurative, is situated within or without the peritoneal cavity, and whether it should be evacuated through the abdominal cavity or extraperitoneally. In septic peritonitis, when purulent accumulations, either encysted or free, can be determined, or are strongly suspected, the abdomen may be opened and washed out and drained. A free incision and full flushing with hot saline solution should follow. The diagnosis is often difficult. He mentions with approval Pryor's method of vaginal drainage early in septic infection, and as regards hysterectomy, remarks that it is the most important question of all. He thinks that he who operates often, operates too much in these cases. The removal of infected and thrombosed veins as suggested and carried out in puerperal pyemia is also noticed, but these cases are generally chronic and give time for study. He would open an ovarian abscess through the vagina rather than the abdomen. Ordinarily such abscesses and pus tubes rarely require operation within a month following labor.

11. **Suprarenal Extract.**—The authors have experimented on rabbits and found that suprarenal extract, which in the normal animal causes by subcutaneous injection no effect on the pupil and nearly no constricting effect on the blood vessels, has a distinct and lasting effect when the sympathetic nerve is cut. In other words, a substance which exerts no effect on a normal organ can exert a considerable effect of long duration if it is deprived of nervous control. This appears to them a principle of fundamental importance, which has an important bearing on therapeutics.

12. **Abdominal Incision.**—The different methods of closing abdominal incisions are noticed by Haggard, who recommends Davison's application of Haughey's method, by accurately closing each layer separately by reliable aseptic suture that can be easily drawn when it has accomplished its purpose. Davison has modified Haughey's method by putting a small reverse bowknot at the ends of the sutures, which acts like a shot on either end, and is easily untied when the suture is to be removed by simultaneous traction on both ends. The conclusions of his article are as follows:

1. The most reliable statistics prior to 1894 show that hernia occurs in from 6 to 29 per cent. of abdominal sections.
2. Suppurating abdominal wounds result in from 31 to 68 per cent. of hernia (according to the method of suturing).
3. The frequency of hernia is increased with the thickness of the parietal wall.
4. The longer the incision, the greater is the likelihood of hernia.
5. Drainage openings predispose to its production.
6. The site of the incision does not materially add to the occurrence, if suturing is uniform.
7. Abdominal supporters have absolutely nothing to do with the prophylaxis of this condition.
8. Subsequent pregnancy does not influence its occurrence.
9. The best preventive of postoperative hernia is the aseptic healing of the wound.
10. Through-and-through suture is satisfactory in thin subjects with short incisions, and is recommended when rapid closure is imperative.
11. The best method of suture is one which insures accurate coaptation of the fascia.
12. The method of closure in three layers by continuous silkwormgut in peritoneum fascia and subcutaneously seems to be freer from objections than any other. Its extended trial is desirable.
13. The patient should be confined to bed from 2½ to 3 weeks to insure thorough organization and consolidation.
14. After a wound is completely healed no other influence acts deleteriously upon the permanence and resistance of the cicatrix.
15. It is believed that less than 2 per cent. of abdominal incisions should become infected, and not over 3 per cent. of hernias should result.

13. **Infant Feeding.**—Mann advocates breast feeding wherever possible and deprecates the use of the commercial foods, of which we can not ensure the purity. The percentage method, while more difficult for the physician as requiring each case to be studied, is the best. He notices especially Freeman's method of milk modification, published in *American Medicine* of May 3, 1902, and abstracted in THE JOURNAL, xxxviii, ¶3, p. 1330. A child at birth has considerable iron stored up in its system, especially in the liver, which it draws on, as milk contains comparatively little iron, and if weaning is too long delayed the child may become anemic. From the seventh to the tenth month the ferments which digest farinaceous foods are present

in sufficient quantities to call for that class of foods. As soon as the teeth are developed enough to chew it, a dry crust of stale bread, at first once and later twice a day, is advised. This not only meets a want but helps to develop the jaws. The present custom of having all food chopped fine, he holds, is a mistake. Meat and its preparations should be allowed but little in infancy. Sufficient fats and carbohydrates are needed by the child to supply the demand for heat, energy, nervous and muscular work. Fats and carbohydrates decrease proteid metabolism and allow a normal growth and development of the child.

14. **Glaucoma.**—The later report of a case here given by Hansell shows that section of the sympathetics was negative in its results. The patient has had at least two attacks of glaucoma during the last eight months prior to writing of this paper, and since then, as stated in a note, has had a third attack. He thinks operation is justifiable in an exceedingly small number of cases. Those selected are simple, non-inflammatory and hemorrhagic glaucoma, and only after every other available remedy has been ineffectual, and the patient with a full understanding of the case asks for its performance. He thinks sympathectomy is inferior to enucleation in sightless, painful, glaucomatous eyes, for the danger in the former is greater and the result less sure.

15. **Hypodermoclysis in Pneumonia.**—Kahn recommends hypodermoclysis in pneumonia without previous phlebotomy and reports a case. He thinks it better to use veratrum viride, thus reducing the force of the heart and avoiding the anemic condition which exists after a large withdrawal of blood.

16. **Electrolysis in Eustachian Salpingitis.**—The following are the general conclusions of Matlack's article:

The 75 cases described represent applications of electrolysis extending into the thousands, which should be sufficient to allow a fairly accurate estimate of its value.

Excluding purely labyrinthine conditions, it has been of service in almost all other forms of deafness, and especially in cases of moderate degree, in which the most pronounced changes were in the tube.

The best results can not be obtained from its unaided use, so this should be supplemented by any other measures that have formerly been found of service. It is especially important to have free access to the tube, and to this end septum irregularities should always be corrected and hypertrophies of the turbinals cauterized. I use a routine way in all cases—solutions of iodin, menthol and camphor, conveyed to the parts by nebulizers—to improve the circulation in the nasopharyngeal mucous membrane. After electrolysis has restored the normal caliber of the tube, a further use of vapors to the middle ear after the method of Dench will be found of great value.

Patients who have been persuaded to continue in this line of treatment for a sufficient length of time are unanimous in their approval, and I am convinced that it marks a distinct advance in aural therapy.

Medical News, New York.

February 7.

18 Report of the Committee on Conference of the Medical Society of the State of New York.
19 *What Advice Should Be Given to a Woman Suffering from Fibroid Tumor of the Uterus? J. Riddle Goffe.
20 *Eye-strain. A. C. Bardes.
21 A Fatal Cases of Polyarthritis Complicated by Choreiform Symptoms and Vegetative Endocarditis. Augustus A. Eshner.
22 *Prostatic Calculi: With Report of a Case. John F. Erdmann.
23 *The Facts in a Case of Hematuria. Charles H. Chetwood.
24 *Trap-drummer's Neurosis: A Hitherto Undescribed Occupation Disease. Charles J. Aldrich.
25 *Experiments with a New Quinin Derivative. F. Pirkner.

19. **Fibroid Tumors.**—The proper treatment for fibroid tumors in a general way is removal by operation, whether they be large or small, in married women or single, only excepting women in very advanced life and those in whom the tumor is complicated by pregnancy. In the last case, Goffe holds that the course pursued must largely depend on the circumstances and conditions of the individual patient. As a rule most cases go to full term and normal delivery. With an expert, cesarean section is safer than myomectomy during gestation in the rare instances where such extreme measures are required.

20. **Eyestrain.**—Bardes considers eyestrain as one of the common causes of many inconvenient symptoms, headache, nervousness, etc., especially in large cities where the tall buildings and deficient sunlight are the rule. The only way is to give the eyes rest, but this is often inconvenient. Of course, the proper glasses should be fitted.

22. **Prostatic Calculi.**—After reporting a case Erdmann remarks in regard to these concretions, that they are usually of large size, rough, and generally found in extremely young or in middle and advanced life, and are seldom accompanied with marked urinary and bladder symptoms. They are due to calcareous degeneration of some previous inflammatory condition affecting the prostatic acini. They may give rise to absorption of surrounding tissue, cystic cavities or abscesses. They often lie dormant for a considerable time. Treatment is distinctly operative, and consists in making any of the accepted incisions for attacking the prostate. Care should be taken to see that none are left in the bladder to form a nucleus for further growth.

23. **Hematuria.**—Chetwood describes a case noteworthy from the fact of its four years' duration without general impairment of health, negative results of laboratory urinary analysis, the satisfactory cystoscopic picture, absence of morbid appearance presented in the gross showing of the kidney at the operation, the microscopic evidence of kidney lesion and the prompt cessation of hematuria following operation.

24. **Trap-Drummer's Neurosis.**—Aldrich's patient was a trap-drummer in an orchestra, who played a number of instruments with hand and foot. The work was hard and the result in this case was a neurosis consisting in a sense of great exhaustion in the muscles, especially the tibialis anticus and peronei of the right leg, with a sensation of pain and heat in the knee-cap, and a sense of constriction in the whole leg, with exhaustion experienced in the anterior muscular groups. After some hours of hard work the whole leg feels heavy, numb and lifeless. The patient was recommended to use the left leg, with apparently some relief.

25. **Saloquinin.**—Cases are reported by Pirkner of the use of saloquinin in malaria and other conditions, a drug which he thinks can well take the place of quinin and is less irritating. In one case where there was a gastritis it seemed to exert a beneficial influence on the gastric innervation, vomiting being stopped when the use of the powder was resumed. The analgesic action of the drug was apparent in two cases, and several others reported showed the remarkable influence it has on diuresis.

Boston Medical and Surgical Journal.

February 5.

26 *On Paratyphoid Fever and Its Complications. Joseph H. Pratt.
27 Typhoid Fever at the Boston City Hospital in 1902. George G. Sears.
28 Typhoid Fever at the Massachusetts General Hospital. Herman F. Vickery.
29 *The Clinical Diagnosis of Typhoid Perforation. John C. Munro.
30 *Diet in Typhoid Fever. Frederick Shattuck.
31 *Typhoid Fever in Private Practice. J. T. G. Nichols.
32 *Upon the Presence of Typhoid Bacillus in the Urine and Sputum. Mark W. Richardson.

26. **Paratyphoid Fever.**—Pratt reports three cases of paratyphoid fever complicated with orchitis, cholelithiasis and phlebitis, and discusses the condition. In the first two he remarks the organism was the *Bacillus paratyphosus* of Buxton; in the latter a variety were present. He speaks of the importance of testing the blood with both groups of paratyphoids, which was strikingly shown in these cases. The condition is described, the symptoms, complications, etc., and the paper ends with a tabulation of recorded cases. He suggests the possibility that many cases of apparent recurrence of typhoid may be possibly paratyphoid cases for which the first infection left no immunity.

29. **Clinical Diagnosis of Typhoid Perforation.**—There were 15 operations in Munro's 26 cases, with one recovery. The diagnostic difficulties are noted. The symptoms early in the course of the fever varied a good deal, and Munro says that a combination of one or two symptoms suggesting peritoneal lesions might or might not exist early in the disease and might or might not persist. The gauge of each individual patient must be learned. The appearance of additional signs can be criticised for not forseeing such an accident, but there after the initial ones warrants early operation. A patient complaining of tenderness and distension suddenly developing spasm and vomiting, or chill with spasm, or any similar com-

bination, is probably developing a surgical lesion. Fulminating symptoms were noted in several of these cases, indicating wholesale infection of the abdomen or perforation. No one can be criticised for not foreseeing such an accident, but there were a number of cases where it was evident that a number of hours' warning had not been rightly interpreted. The need of sufficient nursing force at night is emphasized. Some cases with distension would be relieved by local applications or enemata; the pain would lessen after the first symptoms, and this false sign be given too great a weight. Permission for operation was sometimes obtained too late. As to the symptom of spasm he could not always estimate its significance. To get this sign rightly interpreted is the keynote of early attacks of perforation. In a large proportion of cases the leucocyte count has proven of very little value when most needed. The hemorrhagic cases were the most perplexing; the two conditions of perforation and hemorrhage may co-exist. In the one case of recovery the abdomen was opened six hours after perforation. In two cases that recovered without operation, he thinks the perforation healed spontaneously. The paper ends with brief descriptions of the cases, 26 altogether.

30. **The Diet in Typhoid.**—Shattuck gives the results of experience with some 563 cases, nearly equally divided between milk-fed and more generously-fed patients. He thinks the evidence is sufficient to warrant a further trial of the liberal dietary, as mortality and relapse seem to be less under it rather than greater, and hemorrhage and relapse no more frequent. In the 563 cases the mortality was 8.80 per cent.

31. **Typhoid Fever in Private Practice.**—Nichols insists on the importance of hygienic surroundings and good nursing, a sunny room with an open fireplace, without too much furniture or carpets, and well ventilated. He describes the method of ventilating by the window board, which can be moved as by a hinge from either end, thus giving the entering air the desired direction. If an air-tight stove has to be used it can be incased in sheet iron with suitable openings, cold air being brought from the window board by a tin tube to the space between the casing and the stove, the flow being controlled by a damper. The bed should be a single one, preferably of iron, with wire spring, a soft hair mattress covered with rubber cloth and a double layer of blankets over this. Sheets should be changed and the blankets aired daily, the mattress changed and aired often. If there is room there should be two beds, so that the patient may have a daily change with the least disturbance. If cold bathing is required, there is no difficulty in using cold sponging, spraying or sprinkling, and a fairly effective tub can be made on the bed with a few sandbags and a rubber sheet. Cleanliness and disinfection should be enjoined and the physician should see that they are thoroughly carried out. When these things have been attended to, drugs are of secondary importance and should only be used as conditions arise, the physician bearing in mind the Hippocratic maxim, "Do no harm."

32. **Typhoid Bacillus in the Urine and Sputum.**—Richardson sums up our present knowledge of the bacillus in the urine as follows:

1. Typhoid bacilli are present in the urines of about 21 per cent. of individuals afflicted with typhoid fever.
2. The bacilli, when present, are generally in pure culture, and their number is frequently enormous—many millions in each cubic centimeter of urine.
3. The invasion of the urine by the bacilli takes place in the later stages of the disease. Unless measures are taken to remove the organisms they persist frequently for weeks, occasionally for months, and rarely for years, and thus constitute (*a*) a danger to the patient himself (cystitis and possibly orchitis and epididymitis), and (*b*), what is much more important, a grave source of danger to the public health.
4. The necessity for the rigid disinfection and supervision of typhoid urines is apparent.
5. In urotropin we have a drug which will, in the vast majority of cases, remove the typhoid organisms from the urine, not only in the cases of simple bacilluria, but also in those in which a cystitis has resulted. Very rarely an obstinate cystitis may require the use of vesical irrigations. Very infrequently a case will be seen in which the use of urotropin is followed by hematuria. In such cases the drug should be omitted and irrigation of the bladder substituted.
6. This subject in its relation to the public health is of the utmost importance. In my opinion it should be a fixed rule, and one rigorously enforced, that no typhoid convalescent be discharged as well until his urine has been proved permanently free from bacilli. In large hospitals, with their well-equipped laboratories, such supervision can be carried out with ease. Cases in private practice should be the care of the local boards of health. In this way only can we prevent a considerable percentage of our typhoid convalescents from becoming unsuspected foci for the further distribution of the disease.

He has been able to isolate the organism in the sputum in a case of typhoid fever complicated with pneumonia, and other investigators have shown that it can be present in the sputum, especially if there is a co-existing bronchitis or pneumonia. The subject needs further study, but enough is known to show that in the sputum we have still another excretion which must be carefully disinfected.

Philadelphia Medical Journal.

February 7.

33 *Tropical Diseases: Tropical Dysentery. (Continued.) Charles F. Kieffer.
34 *The Elevation of the Stomach in Gastroptosis by the Surgical Plication of the Gastrohepatic and Gastrophrenic Ligaments; an Original Operation. Henry D. Beyea.
35 *A Study of 55 Fatal Cases of Pertussis. Marion McH. Hull.
36 *What Is Irritable Bladder, and What Is the Best Method of Treating It? Louis Broter.
37 *The Significance of the Temperature in the Diagnosis of Extrauterine Pregnancy During the Period of Collapse from Hemorrhage. Charles P. Noble.
38 An Improved Syringe for Intratracheal Medication. P. S. Donnellan.

33. **Tropical Diseases.**—Kieffer's third lecture treats of chronic dysentery, which he considers in the main to be of the amebic form. He gives illustrative cases and points out the evil possibilities if the disease is not checked. In most cases the chronic condition may be prevented by proper treatment, but unsuccessful attempts or only partial success is liable to cause serious consequences, sometimes even death from anemia, emaciation, etc. Another termination of these tropical cases is a sprue or psilosis, of which he will speak later. When bacillary dysentery becomes chronic, the clinical type is simply one of amelioration of symptoms of the acute stage. It is much more serious and more rapidly progressive than a parallel case of chronic amebic dysentery. The bowel movements number from five to fifteen daily. There is moderate griping, considerable tenderness over the colon; dyspeptic symptoms are pronounced, with flatulence, and a dry, glazed, eroded, beefy-looking tongue, which is constantly smarting and embarrassing eating. The development of sprue as a terminal state is not common. The pathologic conditions are similar to those of acute dysentery. There is ulceration, thickening in both forms, but the diphtheritic forms distinctly prevail with the bacillary type. The *Ameba coli* is constantly present in the amebic form, but in the bacillary form the Shiga bacillus appears in the chronic stage, especially when there is marked ulceration. As regards treatment, the general remedies are intestinal antiseptics such as bismuth, salol, either alone or in combination with bismuth and sulphur, which has been used by Stengel with success. Large doses of bismuth must be given. The local treatment is the main stay. They should not be used in acute recurrences of chronic cases; these should be combated as in the acute stage. It may be necessary to anesthetize the bowel with a 4 per cent. solution of cocain or a cocain and iodoform suppository. He would apply very gentle injections, of which the one of greatest value is silver nitrate, in the strength of 20 to 30 grains to the pint, using three to four pints under all precautions to avoid aggravating the bowel. When the injection is voided it must be in the recumbent position. No abdominal massage should be allowed. If tolerance is established he believes that either very hot or very cold injections are useful in establishing reaction. Creolin he ranks probably next to silver nitrate. Copper sulphate, zinc sulphate, chlorin water, hydrogen peroxid, etc., have been employed or recommended. An exclusive milk diet has been advocated, and if conscientiously carried out is of great value. It is our main stay in the treatment of sprue, but it is severe on the patient. We should endeavor to use nourishment which can be taken up in the small bowel and leave no bulky mass to be carried into the colon to decompose. Changes of climate are often of great value. We must bear in mind the possibility of complication of scorbutus, malaria, intestinal paralysis, etc. The prophylaxis consists in destroying the dysentery stools; never emptying them where they can get into water courses.

Great care should be exercised in the preparation of vegetables, especially when they are consumed raw. Constipation should receive great care, and the condition of the bowels generally. A flannel abdominal binder or "cholera belt" is of established value and should be worn, particularly at night. He would also advise patients to thoroughly wash their hands before each meal.

34. **Gastroptosis.**—Beyea's operation is described in detail. The principle is in placing three rows of interrupted silk sutures from above downward and from right to left through the gastrophrenic and gastrohepatic ligaments, a broad transverse fold or plication is formed in the shortening of these ligamentary supports, and the stomach is raised to normal position. The normal ligaments are shortened and the stomach is elevated to position without disturbing its physiologic mobility or functions. He reports a case and criticises the operations devised by Duret, Rovsing, Davis and others. He claims his own method is surgically and physiologically ideal.

The completeness of the relief and, to my mind, the extraordinary restoration to excellent health of these 7 patients who had suffered for years; the simplicity of the operation (which restores the stomach to normal position by shortening of its natural ligaments without removal of tissue or the formation of abnormal adhesions), and the fact that it is practically free from danger (we would estimate the danger as being no greater than one-fourth of 1 per cent.), must strongly recommend this operation at least in every case of gastroptosis in which the suffering is great.

The patients thus far operated on, he admits, represent but one class, those with gastroptosis and without relaxation of the abdominal walls or diastasis of the recti muscles. Experience alone can teach what influence the operation will have when the relaxation of the abdominal walls is active in the production of gastroptosis. From the analogy of Alexander's operation he thinks it would appear that plication of the ligamentary supports of the stomach would ever and alone be sufficient, but if the contrary is found to be true, Webster's method of resection of the recti might be adopted.

35. **Pertussis.**—Hull gives his experience in an orphanage at Atlanta with which he is connected, and calls attention to the severity of the disease and warns against popular and medical opinion in regard to the evil. We should take greater care to prevent and eradicate this very dangerous disorder.

36. **Irritable Bladder.**—According to Broter's experience, every case of irritable bladder is due to some pathologic lesion on the inner surface of the wall, usually at or near the neck. This may be the result of pressure from displaced abdominal organs or tumor or bacterial infection, trauma, use of the catheter, adjacent diseases, gonorrhea, etc., and pathologically very much resemble chronic cystitis. The first symptom is the desire for frequent urination, with insufficient quantity, heaviness or painful feeling in the hypogastrium. The difference from cystitis is that in one we have a general inflammation of the vesical mucosa, while in the other we have only a localized inflammatory condition. He mentions in regard to prophylaxis, care as to the use of instruments introduced into the organ, thorough treatment of every case of urethritis and great care in the administration of toxic drugs which may cause irritation. All irritating substances such as alcohol, beer, acids and spices should be avoided. Only a mild diet of soups, milk, etc., should be used. He employs a warm saturated solution of boric acid followed by a 1 per cent. solution of silver nitrate, allowing this to remain in the bladder for three or four minutes, drawing it off, and introducing about three ounces of a 2 per cent. to a 10 per cent. solution of ichthyol in water, and allowing this to remain in the bladder for at least half an hour. A silver injection may cause considerable pain, but this can be remedied by anesthetizing the bladder previously with a 1 per cent. solution of cocain. The treatment should be repeated every other day for three or four weeks. Permanent cure usually results.

37. **Extra-Uterine Pregnancy.**—Noble reports a case in which the patient was seen during the period of collapse from hemorrhage and there was a febrile temperature. It showed that the rise of temperature the second hour after onset of symptoms of ectopic pregnancy does not exclude the diagnosis of collapse from hemorrhage.

New York Medical Journal.

February 7.

39 *An Astigmatism Cured by Operation. George J. Bull.
40 *Immigration a Factor in the Spread of Tuberculosis in New York City. Henry L. Shively.
41 *Tuberculous Laryngitis. J. Clarence Sharp.
42 *The Modern Aspect of Common "Colds." John Zahorsky.
43 *Some Unusual Cases of Appendicitis from Private Practice. Howard Lilienthal.
44 The Treatment of Buboes that Threaten to Suppurate. Elbert S. Sherman, J. A. Nydegger, Chas. D. Luckett, Joseph N. Weller and Wm. A. Groat.

39. **Astigmatism.**—Bull reports a case of inverse astigmia of 1.75 D., due in large part to the corneal curvature being greatest in the horizontal meridian, in which he relieved the condition by tenotomy of the left external rectus, being careful not to cut the capsule much below the upper and the lower borders of the tendon. He remarks that the operation has been very satisfactory. He thinks, however, that such measures for the correction of astigmatism should be undertaken in only very exceptional cases. The importance of the case depends not on the cure, but on the light which it throws on other questions. It shows that the tension of the external muscles may have a considerable bearing on intraocular tension and he suggests that the cause of the inverse astigmia so common in glaucoma may possibly be found in the position and relative tension of these ocular muscles, and proposes to go into this subject and examine carefully to determine whether glaucoma can be relieved by tenotomy.

40. **Immigration and Tuberculosis.**—Shively points out the undesirable character of many immigrants as regards disease, especially those that smuggle themselves through from Canada to this country. He remarks that the Jews who are said to be specially immune to tuberculosis are not showing their immunity among the immigrants in New York. The immigrant Jew generally follows an unhealthy sedentary occupation and this also favors the spread of consumption. Other nationalities, of course, are undesirable in the same way. He thinks the privilege of American citizenship is too cheap and thinks we should quarantine against tuberculosis.

41. **Tuberculous Laryngitis.**—Sharp describes two forms of tuberculous laryngitis: 1. Where ulceration is confined to the true cords, ventricular bands and interarytenoid commissure, without surrounding infiltration. These cases, with little digestive disturbance and the toleration of creasote, have a fair chance of recovery. 2. Cases of ulceration of the arytenoids, aryepiglottic fold, true cords, and ventricular bands with infiltration, or infiltration without ulceration, these are hopeless. He mentions the difficulty in diagnosing tuberculous from syphilitic ulceration. Another condition which may give trouble in the diagnosis is characterized by cough, difficulty in breathing, husky voice, thickening of the arytenoid commissure, presenting a stellate appearance frequently mistaken for ulceration. This is common in washerwomen and others who expose themselves to quick changes in temperature, but is amenable to treatment and outdoor life for a cure. He does not believe there is such a thing as primary tuberculosis of the larynx in any case. It is always a secondary process.

42. **Common Colds.**—Zahorsky thinks colds are contagious and that we should fortify the system against these, attend to general nutrition, prescribe healthy outdoor exercise and outdoor life and good ventilation of sleeping rooms. He doubts much the influence of remedies on colds. Until we know just what the infecting agent is, we can very rarely abort a cold. We can only treat the patient symptomatically and make him more comfortable.

43. **Appendicitis.**—Six cases are reported by Lilienthal, one associated with typhoid, another with hemorrhagic symptoms, another complicated with septic nephritis and a fourth where the appendix lay between the layers of the mesocolon and a high degree of aseptic absorption has taken place. Another with syphilitic complications, etc.

Cincinnati Lancet-Clinic.

February 7.

45 *Medical Education. Horace J. Whitacre.
46 Surgery of the Prostate, Pancreas, Diaphragm and Spleen. (Continued.) B. Merrill Ricketts.

45. **Medical Education.**—Whitacre discusses the various points in medical education which have been brought out as to the private school, university school, semi-university school; preliminary educational requirements, organization, didactic lectures, recitations, laboratory teaching, clinical teaching, curriculum, the elective system, etc. He thinks the true university basis is correct and that the subjects of anatomy, physiology, chemistry, pathology, bacteriology, etc., should be taught in the university by salaried teachers. He questioned a number of physicians as regards their opinion of the courses followed by them, and their choice as to the election of a specialty before or after graduation. In 81 per cent. the course was thought insufficient, and 17 per cent. felt that much useless detail might be eliminated. The majority of those who selected a specialty before graduation found after graduation that they had made a mistake. He gives an estimate of the financial expense of running a medical college, including salaries, which shows that it can not depend alone on the fees of its students for its support.

St. Louis Medical Review.

January 31.

47 *Animal Experiments with the Formalin Treatment for Septicemia. C. A. Snodgrass and Oscar H. Elbrecht.

47. **Formalin in Septicemia.**—From a series of experiments undertaken by Snodgrass and Elbrecht on rabbits, the results were apparently negative, and they are, therefore, non-committal as regards the recommendation or condemnation of the formalin treatment of septicemia.

Northwestern Lancet, Minneapolis.

February 1.

48 *Some Considerations of Colles Fracture. A. M. Pond.
49 *The Preparation of the Patient for an Operation and the Relative Value of the Blood Examination. A. E. Benjamin.
50 Report of a Case of Operation for Obstruction of the Bowel in a Very Young Infant. F. J. Campbell.

48. **Colles' Fracture.**—Pond mentions the usual method of reduction, but we occasionally meet cases which can not be thus managed. A man about 32 years of age fell from the second story of a building and had a fracture of the right radius. Attempts to reduce it in the usual way with or without anesthesia, failed, and it occurred to him that if the fracture was caused by extreme extension, it might possibly be reduced by extreme flexion, and consequently the elbow was flexed and rested securely on the table, the hand was grasped and forcible flexion made. At the same time pressure was exerted on the prominence. Reduction was easily accomplished, and can be explained thus: The metacarpal bones were used as a lever; these resting on the semilunar converted it into a fulcrum, and lifted the head of the impacted radius until reduction was possible. He has never before seen this method described, but has always employed it since that time, with uniformly good results. He has used with very gratifying results the method of dressing described by Dr. Moore of Rochester, N. Y., using a roller bandage about one-half inch in diameter as a splint on the palmar surface of the fracture and held in place by a strap of strong adhesive plaster, the whole supported by a sling. In children, however, it is his practice to make a splint composed of several thicknesses of canton flannel immersed in a paste plaster of paris, thus making a special splint for each individual fracture. These harden and become firm enough to prevent luxation of the fragment, and also hard enough to protect the arm from injuries by blows or falls.

49. **Blood Examination Before Operation.**—Benjamin offers the following conclusions of his paper:

1. The necessary preparation of a patient for an operation is too often neglected. 2. The time for the preparation is frequently too short. 3. The general state of the patient before operating is as important as the pathology of the local disease present. 4. Many post-operative complications arise that could be avoided by proper preliminary treatment. 5. The leucocyte count and hemoglobin estimate should be employed as an aid to diagnosis and as a basis of treatment in surgical cases before operation. 6. By the blood examination we may be able to confirm our diagnosis made from clinical symptoms, or we are able to make a diagnosis of concealed pus when not determined otherwise. 7. We may save our patient's life by delaying the operation until the per cent. of hemoglobin reaches a safe standard, or the white count reaches nearer the normal line. 8. We may be justified in operating at once in a case where the white count is rapidly rising or the hemoglobin is gradually falling.

California State Journal of Medicine, San Francisco.

January.

51 A Case of Progressive Muscular Atrophy of Spinal Origin. Henry Harris.
52 Medical Legislation in California. William C. Tait.
53 *State Hospital Care and Treatment of the Acute and Convalescing Insane. Alden M. Gardner.
54 *Is Another Chapter in Public Phthisiophobia About to be Written? F. M. Pottenger.
55 *Oophorectomy: Its Effect on the Mind and Nervous System. Walter Lindley.
56 The Prophylaxis of Venereal Disease. John C. Spencer.
57 Pott's Disease. Emma S. Merritt.

53. **Care of the Insane.**—Gardner discusses the state care of the insane and condemns especially the political influence and pull in the administration of state institutions.

54. **Tuberculosis.**—Pottenger protests against the proposed legislation excluding consumptives from California, showing that it will be useless and inhuman. The resolutions adopted by the Los Angeles Medical Society against such measures are appended.

55. **Oophorectomy.**—From his experience Lindley finds little benefit from oöphorectomy in nervous disorders, etc. The three cases reported all relapsed, though there was temporary benefit. He gives the opinions of others and sums up by saying in selected cases of insanity and epilepsy where there is real disease of the ovaries, producing an artificial menopause is advisable and justifiable, and that with any woman who has diseased ovaries the fear of producing nervous and mental diseases should not in any way interfere with the decision to promptly operate, but the preferable operation is to remove the uterus and leave the ovaries.

St. Paul Medical Journal.

February.

58 The Care of the Tuberculous. H. M. Bracken.
59 Sanitary Legislation as Applied to Tuberculosis. H. Longstreet Taylor.
60 The Prophylaxis of Tuberculosis. T. S. Roberts.
61 The Sanatorium: Its Importance in the Crusade Against Tuberculosis. J. H. Elliott.
62 Sanatoria and Hospitals for Consumptives and Their Position in the Fight Against the Disease as a Public Menace. Arnold C. Klebs.
63 Pulmonary Tuberculosis. Harrison E. Stroud.

Wisconsin Medical Journal, Milwaukee.

January.

64 *Acute Intestinal Obstruction Following Operation for Acute Appendicitis. John B. Deaver.
65 *The Clinical Significance of Ascites. Arthur R. Edwards.
66 *Insanity Following Surgical Operations. Richard Dewey.
67 *Arthritis Deformans in Children. I. A. Abt.
68 The Recognition and Care of Catarrhal Diseases of the Accessory Sinuses. Henry B. Hitz.

64. **Intestinal Obstruction After Appendicitis Operation.**—Deaver finds that delay in operating in acute appendicitis may cause intestinal obstruction and that immediate operation offers the only hope for life in many cases. He notices the symptoms and methods of treatment and reports a number of cases.

65. **Ascites.**—Edwards recapitulates his paper in the following:

1. In general the sum total of physical signs of ascites is unequivocal. 2. The individual signs are not infrequently ambiguous. Tympany, e. g., may be elicited by heavy percussion from contiguous intestines or may be present over the entire abdomen on account of physical laws as yet not finally determined. 3. Ascites may be free, encapsulated, or both conditions may be coincident. 4. Ascites may be mechanical, vascular, due to stasis. 5. It may be due to increased permeability of the blood vessels, i. e., hydremia or cachexia. 6. A third cause is inflammation. 7. A high specific gravity and a high percentage of albumin usually indicates exudation, although there is no close nor invariable correspondence between them, and no absolute physical line can be drawn between the fluid of exudation and the fluid of transudation. 8. The microscopic examination may determine the character of the fluid and again the variety of the inflammation. 9. Operation may be the only method of final diagnosis. 10. Hyaloserositis must be considered. 11. Ascites may cover small ovarian or other pelvic growths.

66. **Insanity Following Surgical Operations.**—Dewey's paper, as far as it gives results, does not indicate a very great danger of insanity after surgical operation. He calls attention to the neuropathic or psychopathic conditions, hemorrhagic diathesis, etc., as matters to be guarded against, as well as the mental condition of the patient. Toxemia, malnutrition, previous attacks of neurasthenia or insanity, alcohol or drug habits and anesthesia, all have a bearing on the possibility of insanity after operation.

67. **Arthritis Deformans.**—Abt discusses the condition in children and reports a case.

The Laryngoscope, St. Louis.
January.

69 Remarks on Thrombosis of the Sigmoid Sinus with Three New Cases. E. Gruening.
70 *On the Value of Electrolysis in the Eustachian Tube. Norval H. Pierce.
71 A Piece of Bougie in the Eustachian Tube. J. Oscroft Tansley.
72 A Case of Sarcoma of the Temporal Bone. Charles J. Kipp.
73 Two Cases of Persistent Fistula After the Mastoid Operation, with Remarks. J. Herbert Claiborne.
74 *Chronic Sphenoiditis in Its Relation to Disease of the Middle-Ear. Francis P. Emerson.
75 Tonsillitis Localized in a Supernumerary Tonsil. Fayette C. Ewing.

70. **Eustachian Electrolysis.**—Pierce concludes that in otosclerotic disease electrolysis is useless. In the great majority of catarrhal cases it has no advantages over other methods of treatment. In a limited number where there is probably a soft exudate near the isthmus, it may be regarded as of some value.

74. **Chronic Sphenoiditis.**—Emerson reports the results of an analysis of 268 cases where caries of the sphenoid was found 25 times. Twenty-one cases were associated with chronic catarrhal and 4 with chronic suppurative ears. Seven presented catarrh on one side and chronic suppuration on the other. In 2 there was only a record of cerumen. Various nervous symptoms, headache, etc., were noted, and in a large proportion ethmoid tumors occurred. While but little difficulty was experienced in probing the sinus, still there was a considerable number with narrow ostia, where a flexible silver probe one-half the size and with the head fused on the end, added greatly to the detection of small rough areas and in some was the only practical instrument. It seemed to have a special beneficial effect in these old chronic cases. There was a practical gain in hearing in many of the cases that was unexpected.

Ophthalmic Record, Chicago
January.

76 Muscle Study in the Light of Neuricity, Tonicity and Contractility. G. C. Savage.
77 *A Case of Idiosyncrasy to Homatropin and Atropin. William L. Phillips.
78 The Ophthalmometer in Determining Errors of Refraction. Lewis H. Taylor.
79 Report of a Case of Dermoid Tumor of the Corneo-scleral Margin. Adolph O. Pfingst.
80 *The Therapeutic Value of Large Doses of the Salicylates in Uveitis. H. McI. Morton.
81 A Simple and Convenient Method for the Mounting of Macroscopic Specimens. H. McI. Morton.
82 A Case of Unilateral Hemianopsia, in Which the Wernicke Hemianopsia Papillary Reaction Was Present. Charles J. Kipp.
83 *Improvement of Vision in Amblyopia from Non-Use. Harry Friedenwald.
84 Report of a Case of Pseudo-torticollis, with Abnormal Associated Movements of Head and Eyes. Eugene R. Lewis.
85 Toxic Amblyopia from Oil of Wintergreen. Wm. L. Baum.
86 *One Hundred and Fifty Magnet Operations. William A. Fisher.

77. **Atropin Idiosyncrasy.**—Phillips reports a case where homatropin and atropin produced myosis instead of the usual effects. The same homatropin used on another patient produced a mydriatic effect.

80. **Uveitis.**—An accident first showed to Morton eleven years ago the beneficial action of large doses of salicylates in plastic iritis. Since that time he has used these drugs in practically all cases of inflammation of the uveal tract with very satisfactory results. The usual dosage of from 10 to 20 grains is attended with no noticeable benefit, but the administration of 30 to 60 grains of the salicylate of soda and repeated will often prove efficient in hastening resolution and acts most favorably as an analgesic. In severe cases he gives 40 grains every two or three hours until relief is obtained or continuance is inadvisable. If any unfavorable results appear it may be discontinued for an interval and again repeated. He finds it best administered in cold water on an empty stomach.

83. **Amblyopia.**—After noticing some cases in the literature, Friedenwald reports the case of a man 78 years of age who had cataract with marked impairment of vision in the right eye, and in the left chronic glaucoma, with the usual visual disturbance. An operation was done for removing the cataract and recovery was rapid and smooth. It was a disappointment, however, to find that, notwithstanding clear media, the patient still saw very badly. Some months later when again seen the vision of the left eye had become further reduced, but the right eye had markedly improved. After operation the vision was so poor that glasses were not ordered, the impression being that the sight was impaired beyond recovery. Nine months passed before decided improvement was noticed and glasses were then given and the sight improved gradually so that in two months more it had reached 10.40 and in 2½ years equaled 16.40. He thinks no other hypothesis than the production of amblyopia from non-use will satisfactorily explain the later gradual recovery of vision.

86. **Magnet Operations.**—Fisher describes the method of the use of different magnets, more especially the Haab giant magnet. He favors removal through the anterior chamber on account of the risk of the episcleral opening. If the metal fragment is very large, the chance of injury to the lens is not of much importance, for a large piece usually destroys the eye. With small ones it is often possible to draw it around the lens through the zonula into the anterior chamber without wounding the lens.

The Canada Lancet, Toronto.
February.

87 A Case of Acute Primary Thyroiditis. E. R. Secord.
88 *Contusion of the Abdomen. Geo. S. Rennie.
89 Four Cases of Herniæ. Thomas J. F. Murphy.
90 *Tonsillar Hypertrophy: Its Operative Treatment, and the Comparative Value of the Different Methods. Perry G. Goldsmith.
91 Some Notes on Examinations for Life Assurance. John L. Davison.

88. **Contusions of the Abdomen.**—Three cases of this condition are first reported by Rennie, one of which terminated fatally. He then reviews the symptoms and the indications for operation. He thinks the condition is often overlooked and the symptoms are frequently deceptive and the seriousness of the case not appreciated until it is too late. An exploratory operation is not only safe but it is the only means of arriving at a correct diagnosis where there is no possible suspicion of injury to the internal viscera. Therefore, he advises early operation in all cases.

90. **Tonsillar Hypertrophy.**—The indications for removal of the tonsils in Goldsmith's review are: 1. Deafness associated with overgrowth, enlarged tonsils in debilitated children or adults, frequent attacks of tonsillar or peritonsillar inflammation, tonsils filled with caseous material, causing impaired nutrition, foul breath, as well as keeping up a chronic pharyngitis, enlargement sufficient to impede speech, respiration or deglutition and small submerged tonsils, whose structure is often one suppurating mass and associated with subtonsillar disease. The various methods are noticed and he advises against the use of the guillotine in people above 17 years of age and also in submerged tonsils, except when projecting during an acute attack of inflammation. It is best to remove the whole tonsil, and this is not always easy with this instrument. The cold snare is thorough and safe. It should not be too fine. The tonsil should be crushed rather than cut on account of possible hemorrhage. The Dundas Grant tonsil punch is especially useful in the small hard tonsils of adults and the long flat tonsils where it is almost impossible to get sufficient of their substance into the guillotine. He has had no experience with the hot snare and sees no advantage with it on account of hemorrhage, which is a serious matter. Even in the milder dressings he advises that great care be taken for some time after operation as hemorrhage may be delayed for one or two weeks. Avoidance of all exertion, and any tendency to clear or separate the crust should be guarded against and the eschar which forms should be allowed to come away itself. In cases of hemophilia operation should be refused. He reports cases illustrating his remarks.

Illinois Medical Journal, Springfield.
February.

92 *The Hartley-Krause Flap in Hemorrhage from the Middle Meningeal Artery, with Reports of Two Cases. Samuel C. Plummer, Jr.
93 Tetanus: A Case; Recovery. F. E. Wallace.
94 *Dacryocystitis. E. E. Clark.
95 Ophthalmia Neonatorum. I. L. Firebaugh.
96 *Nephritic Eye Lesions. Willis O. Nance.

97 *Congenital Phimosis—A Protest Against Indiscriminate Operative Interference. C. C. Hunt.
98 Some Essential Points Regarding Chronic Constipation. J. W. Hensley.
99 *Spinal Cord Conditions in Severe Anemias. Archibald Church.

92.—This article appeared elsewhere. See THE JOURNAL, xxxix, title 95, p. 1137.

94. **Dacrocystitis.**—Clark remarks on the paucity of the literature of this subject and suggests that lack of a plan of treatment may be the cause. The method he has employed has been the use of chlorid of zinc. He reports two cases. In the first, other measures failing, he injected into the sac three drops of a 20 per cent. solution. There was violent reaction, but the treatment restored absolutely every function of the drainage system permanently. He would hesitate to advise so strong a solution as this, feeling that one would be safer in not going over 10 per cent. Froelich, who recommended the method, used a 5 per cent. strength. His results make him enthusiastic as to this method of handling dacryoeystitis.

96.—This article appeared elsewhere. See THE JOURNAL, xxxix, ¶44, p. 1619.

97. **Congenital Phimosis.**—Hunt protests against the too frequent practice of operation for this condition, holding that it cures itself in a great majority of cases. He is convinced that the so-called reflex influences attributed to it have been greatly exaggerated.

99.—This article appeared elsewhere. See THE JOURNAL, xxxix, ¶15, p. 335.

Mississippi Medical Record, Vicksburg.
February.

100 Creosote. Cornelius Skinner.
101 *A Preliminary Report on Tetra-ethyl-Ammonium-Hydrate and Solution of Chlorid of Platinum. Joseph W. Irwin.

101. **Tetra-Ethyl-Ammonium-Hydrate.**—Irwin's attention was called to this drug by notice of it in the journals and having several cases that needed a uric acid solvent, he prescribed it. These included several cases of chronic rheumatism and three of arthritis deformans, in which the results were most satisfactory. He gave it in the usual recognized dose, 5 to 15 minims of a 10 per cent. solution in mixture three times a day. He also notes a case of what he considers gastric cancer treated with chlorid of platinum, one drop of a 1 per cent. solution, increased gradually up to 5 drops, with great benefit. In a second case which he has also treated in the same way it has relieved pains and the cachexia is disappearing.

Bulletin of the Johns Hopkins Hospital, Baltimore.
February.

102 Note on the Collection of Human Embryos in the Anatomical Laboratory of Johns Hopkins University. Franklin P. Mall.
103 Note on the Framework of the Thyroid Gland. Joseph M. Flint.

Clinical Review, Chicago.
February.

104 Congenital Dislocation of the Hip-joint and Clubfoot. Adolf Lorenz.
105 Glimpses at European Gynecology and Obstetrics. Henry F. Lewis.
106 A Report of Three Cases of Infantile Cataract. J. Elliott Colburn.
107 Clinical Lectures on the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

Woman's Medical Journal, Toledo, Ohio.
January.

108 Floor of the Pelvis and Muscular Bands Broken in Parturition and Effect on Floor. Rebecca M. Evans.
109 Puerperal Infection with Laparotomy; Report of Case. Eliza H. Root.
110 The Prevention of Lacerations of the Perineum. Mary A. Whery.
111 A Case of Inanition Fever in a Newborn Child. Margaret T. Shutt.

Journal of Medicine and Science, Portland, Me.
January.

112 Some Causes of the Nineteenth Century's Advancement. F. Moulton.
113 Foot and Mouth Disease. F. W. Huntington.
114 Coroner or Medical Examiner, Which? F. W. Searle.

New Orleans Medical and Surgical Journal.
February.

115 A Note on the Treatment of the Chancre. Isadore Dyer.
116 Chronic Osteo-myelitis of Left Humerus and Lower One-third of Left Femur, Occurring as a Sequence of Typhoid Fever; Osteotomy; Preliminary Observations. B. A. Terrett.
117 Jacksonian Epilepsy, Occurring Two Weeks After a Severe Blow on the Head; Six Months Later Craniotomy Performed—Preliminary Observation. B. A. Terrett.
118 Depressed Fracture of Right Parietal Bone Near Coronal Suture Line and of Two Years' Standing, Decided Mental Symptoms Developed as a Result of the Traumatism; Circular Craniotomy; Preliminary Observation. B. A. Terrett.

Canadian Journal of Medicine and Surgery, Toronto.
February.

119 Christian Science and Mortal Mind. Jas. H. Richardson.
120 One of the Troubles of Civilized Man. Helen MacMurchy.
121 Advice that Killed—Physicians' Fireside Talk. Ernest A. Hall.

Medical Times and Register, Philadelphia.
January.

122 The Curative Effect of the Vapors of Formalin in Whooping Cough. Jezdik Cenex.

Medical Standard, Chicago.
February.

123 The Commoner Diseases of the Eye—Cataract and Other Affections of the Crystalline Lens. Casey A. Wood and Thomas A. Woodruff.
124 A Pediatric Clinic. Frank X. Walls.
125 Radiotherapy in Tuberculosis. Gordon G. Burdick.
126 Practical Dietetics. A. L. Benedict.
127 A Unique Case of Hernia. V. Pleth.
128 Pain and Its Indications. E. C. Hill.

Pediatrics, New York.
January.

129 A Case of Acute Osteomyelitis, with Remarks on the Surgical Treatment of This Affection. Charles G. Cumston.
130 Concerning Antipyresis in Children. E. W. Saunders.

Southern Practitioner, Nashville, Tenn.
February.

131 Address, Middle Tennessee Medical Association. L. S. Sheddan.
132 Coughs and Their Treatment. Alex. Desoto and C. V. Crimpton.

Detroit Medical Journal.
January.

133 Surgical Clinic at Harper Hospital (Abdominal Hysterectomy, Etc.). H. O. Walker.
134 Uremia: A Résumé of Theories and Research. Homer E. Safford.
135 Recurring Tonsillitis. Jno. A. Donovan.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Nouvelle Iconographie de la Salpetriere, Paris.

1 (XV, 3.) 3 cas de néoplasies cérébrales. G. Ballet.—10 photogravures.
2 Cas de monstruosité rare de la face et de l'encéphale. P. Haushalter.
3 *Le syndrome psychasthénique de l'akathisie. F. Raymond.
4 *La vie biologique d'un xiphopage. N. Vaschide and C. Vurpas.
5 Cas d'eunuchisme familiale. P. Sainton.
6 Les pierres de vessie (urinary calculi) en Hollande. T. Bolk.
7 (No. 4.) 3 cas de démence précoce et catatonie. J. Seglas.
8 La psychiatrie dans le théatre Japonais. R. Geyer.
9 (No. 5.) Les déviations de la colonne vertebrale dans la maladie de Parkinson. J. A. Sicard and L. Alquier.
10 Le syndrome du torticolis spasmodique. Destarac.
11 *Etude sur les lesions radiculaires et ganglionnaires dans le tabes. A. Thomas and G. Hauser. (Commenced in No. 4.)
12 Contribution à l'étude physiologique de quelques bromures (bromids). C. Féré.
13 Existe-t-il une variété péronière de l'amyotrophie Charcot-Marie? P. Sainton.
14 Painting by Romain, 1533, "La maladie." C. E. Mariani.

3. **Morbid Impossibility to Remain Seated.**—Haskowic first described this condition last November and applied the term "Akathisia" to it. The subject can seat himself and remain seated a few minutes, but then the contortions begin, and unless he gets up he suffers actual torture. When he rises to his feet the symptoms vanish. Haskowic was inclined to seek for some organic foundation, but Raymond has recently observed a case with the same syndrome, and the circumstances and general aspect of the case classed it at once as a professional phobia.

4. **Biologic Life of a Xiphopagus.**—The Chinese united twins, or xiphopagus, now being exhibited in Europe, were subjected to a physical examination by all the known laboratory tests. The results show a most interesting harmony between the individual life of each twin and the fundamental biologic life in common.

11. **Organic Lesions in Tabes.**—This article is based on the clinical and postmortem examination of 11 subjects, observed in Déjérine's service. The results demonstrate that the essential lesion in tabes is a dystrophy affecting the entire peripheral sensory neuron, although most pronounced in the central prolongation of the nerve cell. It generally affects also certain portions of the motor protoneuron and of the sympathetic system. The histologic alterations are characterized by modifications of the nerve fibers comparable in certain respects to those noted in the course of toxic neuritis. They differ completely from those of Wallerian degeneration. The cell body of the sensory protoneuron generally seems intact, but at times it presents evidence of atrophy. Even in the absence of actual definite lesions, it is legitimate to suppose that its trophic function is to some extent compromised under the circumstances.

Presse Medicale, Paris.

15 (II, 104.) L'ictère hémaphéique. A. Gilbert and M. Herscher.
16 Les ferments du lait (milk). P. Nobécourt and P. Merklen.
17 (No. 105.) *Les tendances nouvelles de la thérapeutique. C. Bouchard.
18 Radiographies d'artères athéromateuses. A. Loret.
19 L'éosinophilie du vésicatoire (blister). V. Audibert.
20 (I, 1.) *Pathogénie du tabes dorsale. J. Nageotte.
21 *Indications et résultats de la cure gingivo-dentaire dans la pelade (alopecia areata). F. Trémolières.
22 *Exagération des réflexes dans la carcinose. Nouveau signe de diagnostic des tumeurs malignes. D. de Buck and O. van der Linden (Ghent).
23 (No. 2.) Surmenage (overwork) professionelle et dilatation hypertrophique du coeur avec athérome. P. Merklen.
24 Néphrorrhaphie. Nouveau procédé opératoire. Canac-Marquis (San Francisco).
25 Des médications thyroidiennes. Posologie, accidents et contre-indications. Briquet.
26 (No. 3.) Des hernies inguinales graisseuses (of fat). H. Caubet.
27 La détermination du coefficient nutritif cellulaire. J. Mitulesco.
28 (No. 4.) *Les étapes (phases) du processus inflammatoire. Introduction générale à l'étude des maladies bryocytiques. F. J. Bosc.
29 Cancer primitif du poumon (lung). F. Ramond and L. Boidin.
30 *Recherche du bacille tuberculeux dans le sang (blood) par homogénisation du caillot (clot). F. Bezançon, V. Griffon and Phillbert.
31 Décoctions de céréales. Laits (milks) végétaux. A. Martinet.
32 (No. 5.) Principes de chirurgie. J. L. Faure.
33 L'autorépresentation chez les hysteriques. G. Comar.
34 La suralimentation des tuberculeux. A. Martinet.
35 (No. 6.) *Le rôle des microbes anaérobies dans l'infection urinaire. J. Albarran and J. Cottet.
36 Foie (liver) infectieux aigu (acute), simulant l'abcès hépatique. Remlinger.

17. **New Tendencies in Therapeutics.**—In this address at the Egyptian Congress Bouchard expatiated on the absurdity of dosing with 6 gm. of sodium salicylate, for instance, to cure a single joint lesion. If the diseased part weighs 50 to 100 gm. in a man of 120 pounds, for instance, then only 5 to 10 mg. finds its way to this diseased part and cures it, while the remaining 599 cg. is not only useless and superfluous but directly injurious. He has been proclaiming this principle for some months and now brings details of cases showing that the proportionate fraction of the general dose, injected locally, will heal a local rheumatic arthritis. He has also been successful in the same way with pleurisies and even in rheumatic pericarditis. In the latter affection a local injection of 10 cg. reduced the temperature from 39 to 37.6 C. and the friction sounds vanished after a second injection in one case. Benedikt has reported the cure of severe peri-, endo- and myocarditis in the course of acute articular rheumatism, by local injections of phenic acid, but Bouchard has not been so successful in endocarditis. He has cured by local salicylic medication painful muscular contracture of the adductors of the thigh, injecting it into the insertions of the tendons. Also sciatica and the neuritis of zona. In inflammation of a serosa he does not inject the medicine into a closed cavity but into the diseased tissues or the vicinity. He has also attempted this method in the treatment of the fulminating pains of tabes, but without results, although successful with local medication in syphilis as an adjuvant to general treatment. He has witnessed the subsidence of gummata and neuritis after local injections of 1 to 6 c.c. of potassium iodid or .2 mg. of bi-iodid of mercury. He reiterates that wise therapeutics tends more and more to supplement or supplant general with local measures either for their antiseptic action or for their stimulating influence on the antitoxic reaction.

20. **Pathogeny of Tabes.**—Nageotte believes that he has established that tabes is the result of a transverse interstitial radicular neuritis, an inflammatory lesion variable in its virulence and capricious in its localization. It is preceded by a syphilitic meningitis, and clinicians should recognize and treat this before the development of the process affecting the noble elements. Thanks to Widal, we have now a certain means of detecting this meningitis while it is still uncomplicated, before any symptoms have developed. No one should hesitate to perform lumbar puncture in syphilitics at the slightest suspicious symptoms, he remarks, perhaps even as a routine measure at a certain stage of the syphilitic infection without waiting for symptoms to develop.

21. **Gingivo-Dental Treatment of Alopecia.**—The trophoneurotic theory of alopecia suggests treatment of the jaws and teeth as important factors in its cure. Trémolières reviews recent experience in this line. In all but 2 out of 21 cases attention to the mouth was followed by the regrowth of the hair. The failures may be possibly attributed to the development at the time of the wisdom teeth.

22. **Exaggeration of Reflexes Sign of Carcinosis.**—De Buck published last year an account of a case of carcinoma of the breast in which the degeneration of the spinal cord was as marked as in case of compression from a metastasis. This led him to study the nervous system in case of carcinosis and he found that in almost every case of carcinoma or sarcoma, wherever its location, the tendon reflexes were more or less exaggerated. The cutaneous reflexes were variable, exaggerated in some. Babinski's sign was never noted. The exaggeration of the tendon reflexes was observed before the cancerous dyscrasia was very pronounced, the tumor very large, or the lymphatics involved. It is not found with the same intensity, regularity nor constancy in the incipient stages of any other toxemia, according to his experience.

28. **The Bryocytic Diseases.**—Bosc proposes the name bryocytobe for the living parasite which induces proliferation of cells, or the more euphonious term, bryocyte. The organism reacts differently to various parasitic invasions, the defense being along different lines. In acute microbian diseases, for example, the cellular proliferation affects the leucocytes more particularly; in other diseases the fixed cells are affected. From the study of the various morbid groups and especially of the blastomycetic reactions, he has become convinced of the existence of a type of disease hitherto ignored. This new type has structural and histogenetic characteristics in common with true cancerous neoplasia, while at the same time it is infectious and virulent. It includes variola in which the pustules are characterized by a proliferation of the epithelium with invading tendencies, degenerative and irregularly progressing. The pustule is evidently the means of defense employed by the organism. The polynucleosis observed is directed principally against the remains of the degenerated cells of the pustule. The peculiarities of this group of diseases are best studied in the variola of sheep, sheep-pox, which seems to be the intermediate type between variola, vaccine and aphthous fever on one hand and syphilis and cancer on the other. He describes in detail the various points which have led him to this conception of the cancerous tumor as an indefinitely progressive inoculation pustule. The chancre in syphilis is also of this type, accompanied by evidences of participation of the lymphatics in the defense, as occurs also in sheep-pox. The long duration of the eruption and the recurrence of symptoms from time to time show that it partakes of the character of indefinite progression, which is a marked attribute of cancer. In syphilis, as in the other diseases of this group, mononucleosis at first chiefly prevails. The polynucleosis occurring later is evidently due to secondary infection or to the disintegration of the lesions. The essential lesion is an epithelial proliferation; the pustulous lesions in the organs are similarly epithelial, while the connective tissue involvement in the lesion is precisely like that observed in sheep-pox. All these diseases are links in the

chain of lesions which are defensive processes on the part of the organism seeking to immure the parasite in its nest. The various phases of the inflammatory process show it to be the most exalted and specialized type of defensive inflammatory reaction, with cancer as its ultimatum. He has succeeded in producing an anti-sheep-pox serum which has proved powerful and effectual, and these results encourage the hope that the same method of treatment may yet prove successful for all the diseases in this group. In regard to the causal germ, he is inclined to accept the cell inclusions observed in vaccine, variola and cancer and suggests the term bryocytes as mentioned above, from the Greek word to make proliferate. This group should, therefore, be classed as the bryocytic diseases.

30. **Homogenization of Clot in Search for Bacilli.**—The method described is like Jousset's, mentioned below. Five c.c. of blood are mixed with 5 c.c. of distilled water and 5 drops of caustic soda until the coagulum is dissolved. Twenty c.c. of water are then added and the whole boiled for ten minutes. It is then poured into two tubes and centrifugalized, when tubercle bacilli are easily distinguished in the sediment under the microscope.

35. **Anaerobic Microbes in Urinary Infection.**—Albarran remarks that bacteriologic inspection of urinary infection is not complete without search for anaërobic bacilli. He found 9 different varieties in a number of patients examined. In one case of pyonephrosis the anaërobics were alone; in 3 associated with aërobics, and in 2 the latter were alone. In 3 cases of tuberculous renal infection he found anaërobics in one. In cases of infection of the bladder and cystitis he found sometimes aërobics exclusively and sometimes anaërobics or both combined. A very virulent anaërobic was found in one out of 4 cases of suppurative prostatitis. In 25 cases of periurethral infection from infiltration of urine or urinary abscess, anaërobics were absent in only 2; in 16 they were associated with aërobics, and in 7 the anaërobics were alone. The importance of the anaërobics in the generation of secondary infections by way of the blood is demonstrated by one case observed in which there was infiltration of urine and a secondary phlebitis with abscess at the knee. The colon bacillus and an anaërobic were found associated in the perineal focus, but the latter was found alone in the metastatic abscess.

Revue de Chirurgie, Paris.

37 (January.) *Pathogénie de l'hydronéphrose intermittente. Bassinets (pelvis) et uretéres neonatorum. P. Bazy.
38 Occlusions aigues de l'intestin grêle (small), et de leur différenciation avec les appendicites. L. Cahier.
39 Cyste hydatique costal. H. Geraud and R. Mignot.
40 Traitement chirurgicale des salpingites. Etude historicale et clinique. Acquaviva and Roux de Brignolles.
41 *Du myelome multiple des os (of the bones) avec albumosurie. Etude des tumeurs primitives multiples du squelette. P. Vignard and L. Gallavardin.

37. **Intermittent Hydronephrosis.**—Bazy describes 2 cases cured by ureter-pyelo-neostomy. In these, and in 2 somewhat similar cases the obstruction to the flow of urine proved to be one or more folds in the ureter as it entered the pelvis, the folds held in place by external adhesions, or else there was actual constriction of the ureter at this point. Removal of the adhesions or excision of the stricture resulted in a complete cure. In 2 of these cases there were no evidences of infection. In order to study the possible origin of the adhesions in these aseptic cases he examined the ureters and kidneys in a large number of newborn infants which might include some who would have had hydronephrosis if they had lived to grow up. More than 100 were examined and injected, and he gives cuts of 63 such ureters still attached to the pelvis. Only a few were regular. The others exhibited numerous strictures, folds and other irregularities. Only 15 presented a normally regular aspect their entire length. All the others exhibited folds, constriction or torsion, and generally multiple. Some of the ureters and some of the pelves were large; others very small. Some must have allowed the absolutely free passage of urine; others would have favored retention on the slightest provocation. Reviewing the data observed and his clinical experience Bazy thinks that they explain why surgical intervention limited to resecting a portion of the renal parenchyma, or something of the kind, in the hope to abolish the cavities or culs-de-sac, is usually useless and is based on an incomplete knowledge of the pathologic physiology of hydronephrosis. It is due, especially the intermittent form, to some congenital predisposition of the pelvis and accessorily of the ureter. The maximum of these conditions is the combination of a large pelvis, horizontal, shaped like an elbow or bagpipe, with strictures, folds or torsion of the upper end of the ureter. Hydronephrosis may be the consequence of a movable kidney, but generally the ptosis and movability are consecutive to the hydronephrosis. The torsion, folds or constriction may be rendered permanent by adhesions or by a sclerosis of the walls connected with some irritative process, from attenuated infection or aseptic irritation.

41. **Multiple Myeloma of the Bones.**—Reviewing a case personally observed and four collected in the literature, these writers claim a special place for primary multiple tumors of the bones. They develop at several points in the bony frame apparently simultaneously, although it is not always possible to distinguish between the primary tumor and the metastatic nodules. The tumors develop principally in the bones with red marrow, sternum, ribs, vertebræ and skull. They are never accompanied by visceral generalization, and they remain restricted to the skeleton. Some of this group of tumors exhibit the aspect of lymphadenoma, others of endothelioma, while still others have the special structure of myeloma, as in the case personally observed. The latter class is further distinguished by the large numbers of the tumors, their possible clinical latency, the rapid cachexia, fever and terminal coma, and the finding of Bence Jones' albumose in the urine. His patient was a man of 56, with no alcoholic, malarial nor syphilitic antecedents. The affection commenced with a sudden pain in the ribs, coughing and expectoration and entailed rapid cachexia and death in less than six weeks. All the ribs and the sternum were affected with the tumors, some as large as a walnut.

Semaine Medicale, Paris.

42 (XXIII, 1.) *Le diagnostic de siège (location) des calculs biliaires. H. Ehret.
43 *La salpingoscopie ou cystoscopie du nasopharynx. A. Valentin.
44 (No. 2.) *Des variations pathologiques du pouvoir hémolytique du liquide céphalo-rachidien. L. Bard.
45 (No. 3.) Pathology of Pyramidal Tract. P. Marie and G. Guillain.—Le faisceau pyramidal direct et le faisceau en croissant.
46 *Inoscopy or Fibrinoscopy. A. Jousset.—Nouvelle méthode pour isoler le bacille de Koch des humeurs de l'organisme.

42. **Site of Gallstones.**—Ehret thinks that important information may be derived in regard to the location of gallstones by observing the character of the febrile attacks, the icterus, the pain and the composition of the blood, in cases with little, if any, icterus in the intervals and with the color of the stools showing the influence of bile. The fever, for instance, is abrupt, rises high and disappears in a few hours when the stone is in the lower biliary passages. On the other hand, when the stone is in the gall bladder the fever is apt to be less intense, or it may be prolonged for several days. Numerous attacks of icterus, rapidly succeeding each other, indicate stones in the bile duct. This is indicated further by the character of the pains, which are not violent. The patients may feel no pain or merely a dull ache in the region of the liver. Violent pains accompanying the attacks point to the gall bladder. When the number of leucocytes is increased and remains high even during the intervals, the purulent focus indicated by this hyperleucocytosis must be in the gall bladder. The evidence of bile in the color of the stools is incompatible with the assumption of an ascending suppurative angiocholitis originating in the bile duct. On the contrary, if the number of leucocytes is normal in the intervals, while it increases notably during attacks, the fact is strongly in favor of a gallstone impacted in the bile duct.

43. **Cystoscopy of the Nasopharynx.**—Valentin calls the little instrument he has invented for the purpose of examining the internal orifices of the eustachian tubes, the salpingoscope. It is inserted through the lower nasal meatus and the views obtained far surpass those attainable by any other method. He

gives cuts showing the behavior of the orifice of the tube, which varies in pathologic conditions. The findings may prove an additional means of diagnosing certain affections of this region.

44. **Hemolysis in Cerebrospinal Fluid.**—Bard has examined the hemolytic power of the cerebrospinal fluid, supplementary to cytologic findings, and proclaims that important information may be derived from it. Very little of the fluid is required; the procedure is rapid and simple and the results can be determined with the naked eye. Five to 10 drops of the cerebrospinal fluid are placed in each one of a row of centrifugalizer tubes and distilled water added to each in turn. The first tube has no water; to the second 2 drops of water are added; to the third 4 drops; to the fourth 6 drops, and so on. In normal conditions hemolysis is first observed with 12 drops of water to 10 drops of cerebrospinal fluid. If it occurs with less water or is very marked with 12 drops, the fluid is pathologic. The hemolytic power is high in the commencement of an affection, but, as the defensive powers of the organism come into play, it falls and is frequently below normal as recovery approaches. The findings parallel those of cytology in certain affections but differ widely from them in others. The method has proved especially useful for the differentiation of obscure causes of hemiplegia, and also to separate purely functional troubles of the central nervous system from those which depend on an infectious or toxic origin.

46. **Inoscopy.**—Jousset has coined this term from the Greek word for fibrin to describe his method of distinguishing the Koch bacillus by artificial digestion of the fibrinous matters in the sputum, blood or effusion to be examined. He has found the most effective fluid for the purpose to be a mixture of 1 to 2 gm. of pepsin in glycerin and hydrochloric acid, each 10 c.c., and 3 gm. of sodium fluorid, with 1000 gm. water. The results were positive in 23 cases of pleurisy examined, working on 10 to 500 gm. of serous fluid. In 12 cases of ascites the bacillus was found in 8, and in 3 of these the clinical signs all pointed to a liver affection, but the autopsy confirmed the tuberculous nature of the disease. Differentiation was also possible by this means in 2 cases supposed to be typhoid fever, and in a number of cases of unsuspected tuberculous affections. The method also reveals gonococci and other pathogenic germs, but is especially useful in respect to the tubercle bacillus.

Centralblatt f. Bakteriologie, Jena.

47 (XXXII, 12.) Zur Etiologie der Anginen. H. Bonhoff.
48 Oxygen-Conveying Granules in Anthrax Bacilli. A. Dietrich.—Sauerstoffübertragenden Körnchen in Milzbrandbacillen.
49 Amöben-Befunde bei der in Ost-Preussen herschenden Ruhr (dysentery). H. Jaegger.
50 Zur Kenntniss der sexuellen Amphitypie bei Dicrocoeliinen. J. Hollack.
51 Ueber Bau und Embryonal-Entwicklung von Zoogonus mirus LSS. R. Goldschmidt.
52 2 neue Distomen. L. Cohn.
53 Eine neue Cysticercus-Form. V. Linstow.
54 Notizen zur Helminthologie Egyptens. A. Looss.
55 Die Morphologie der Blastomyceten im Organismus in Bezug auf die Antikörper des Blut-Serums. F. Sanfelice.
56 Ueber Wirkungen der Hemolysine im Organismus. R. Kraus and C. Sternberg.
57 Le vaccin contre la peste. G. Cruz.
58 Untersuchungen von Nährböden (culture media) zur quantitativen Schätzung von Bakterien in Wasser und Abwässer. S. de M. Gage and E. B. Phelps.
59 Beitrag zum tinctoriellen Verhalten (behavior) des Bact. Pestis. E. Horniker.

Centralblatt f. Gynaekologie, Leipsic.

60 (No. 50.) Zur Kenntniss vom Bau (structure) der Placenta circumvallata. Woodarz.
61 *Die operative Behandlung der puerperalen Pyemie. A. Sippel.
62 Spasmodic Contraction of Os as Obstacle to Birth. Durlacher.—Kramphafte Zusammenziehung des Mutermundes als relatives Geburtshindernis.
63 *Ist die Ventrofixation des Uterus eine berechtigte (justifiable) Operation? H. J. Kreutzmann (San Francisco).
64 Auskochbare Bougie (that can be boiled) zur Krause'schen Methode. A. Hink.
65 Apparat zur Applikation lokaler Kälte im weiblichen Genital-Trakte. Stroynoski.
66 (No. 51.) Fall von totaler Schleimhaut- (mucosa) Atrophie des Uterus. R. Volk.
67 Fall von primärem Tuben-Carcinom. M. Graefe.
68 Fall von Hematocele nach Laparotomie ohne Vorhandensein einer Tubar-Gravidität. A. E. Neumann.
69 Der von Lorthioir veröffentlichte Fall von Diphallie. (Case published by Lorthioir.) F. Neugebauer.
70 Milch-Pumpe mit Glas-Ballon. H. Gloeckner.
71 Apparat zur Cervix- und Uterus-Behandlung mit flüssigen (fluid) Medikamenten. Ibid.

61. **Operative Treatment of Puerperal Pyemia.**—Sippel states that he advocated operative treatment long before Trendelenburg, but has had no opportunity to apply it. Two of his four patients recovered spontaneously, and the others for external reasons could not be operated on, and both died. The intervention he proposes is to remove the uterus in case of purulent phlebitis with the clinical picture of acute pyemia, and at the same time resect the veins involved. He does not approve of the extraperitoneal method followed by Trendelenburg in the case he reported of successful ligation of the hypogastric and uterine veins. He remarks, in conclusion, that operative intervention should be reserved for a last resort, as many cases of pyemia terminate in spontaneous recovery.

63. **Ventrofixation of Uterus.**—Kreutzmann gives several reasons why ventrofixation should be discarded, advocating in mobile retroflexio vaginofixation or the Alexander-Adams, and in other cases, mobilization followed by the shortening of the round ligaments.

Centralblatt f. Kinderheilkunde, Sprottau.

72 (VII, 8.) *Die Bedeutung der Lymph-Drusen (glands) im klinischen Bilde der Tuberculose und Scrofulose. L. Furst.
73 (No. 11.) *Ueber direkte Fettanreicherung (fattening) atrophische oder drüsenkranker Kinder (emaciated or scrofulous children). L. Furst.
74 (No. 12.) Fall von Purpura hemorrhagica nach Masern (after measles). L. Falk.

72. **Importance of Lymph Glands in Tuberculosis and Scrofula.**—Furst earnestly advocates extirpation of all accessible swollen glands when they do not promptly subside spontaneously, even when they do not seem to threaten secondary infection. If operation is refused he thinks that iodin and bromin in combination in a natural mineral water, such as the Darkauer Iodbrom water is an almost infallible means of treatment. Enlarged angry glands subside better under this treatment than under iodin salves, cod liver oil, etc. He applies to the neck or trunk compresses dipped in a quart of tepid water in which has been dissolved one dessertspoonful of Darkauer iodin salts. The compress is renewed every three hours. In case of very extensive lesions he orders a general bath with one-half to one kilo of the Darkauer salts to the bath. On suspicion of bronchial or mesenteric adenitis he gives the Darkauer water internally before breakfast, and has never observed any gastric or bowel disorders from its use.

73. **Carbonated Cod Liver Oil.**—Fürst has found that carbonated cod liver oil is assimilated much more rapidly than ordinary oil and the children fatten on it in one-third of the time. It is now produced in a durable form by impregnation under pressure, so that the carbonic acid gas does not escape when the bottle is opened. It keeps better and the taste is improved, while the digestibility and diffusion through the chyle are much enhanced.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

75 (XXIX, 2.) Spontane Lungen-Tuberculose mit grosser Caverne bei einer Wasserschildkröte (turtle), Chelone corticata. F. F. Friedmann.
76 Ueber lösliche (soluble), durch aseptische Autolyse erhaltene Gift-Stoffe (toxic substances) von Ruhr- (dysentery) und Typhus-Bazillen. H. Conradi.
77 *Die syphilitischen Herz- (heart) affectionen. J. W. Runeborg (Helsingfors). (Commenced in No. 1.)
78 *Zur Pathologie und Therapie der Sklerodermie im Kindesalter (childhood). W. Ebstein. (Commenced in No. 1.)
79 Zur Casuistik der Scheidenrisse (laceration of perineum) während der Austreibungsperiode (during expulsion). Baumbach.
80 Necessity of Straightening the Uterus before Applying Credé's Maneuver. Elschner.—Ein häufiger Fehler bei der Anwendung des Credé'schen Handgriffs.
81 Klinische Erfahrungen über den therapeutischen Werth der elektromagnetischen Behandlung. A. v. Sarbo.
82 (No. 3.) *Zur Aetiologie und Symptomatologie des hochgradig beweglichen Herzens (extremely movable heart). Rumpf.
83 Fall von anatomisch nachgewiesener Spontan-Heilung der tuberkulösen Peritonitis. O. Borchgrevink.
84 Ueber Erythromelalgie bei Syringomyelie des Cervikal-Marks (spinal cord). Taubert.—One case.
85 *Proposal for Treatment of Following Head. Steffeck.—Ein neuer Vorschlag zur Behandlung des nachfolgenden Kopfes.
86 Die Blut-Serum-Therapie bei der Dysenterie. Kruse (Bonn). (Commenced in No. 1.)
87 Ueber die Anwendung des Pyramidons bei Typhus abdominalis. L. Byk.
88 Das Adrenalin zur Coupirung von Asthma-Anfällen. E. Aronsohn.

77. **Syphilitic Heart Affections.**—Runeborg cites evidence to prove that the localization of the syphilitic process in the

heart is not a rare occurrence. It may take the form of gummatous affections of the vessels and muscle, of aortitis with dilatation and aneurismatic enlargement of the aorta, or occasionally of a valvular affection of this artery, coronary arteritis with myomalacia and connective tissue indurations (Schwielen) in the heart muscle, or it may appear as a diffuse gummatous myocarditis. The most striking symptoms are recurring pains suggesting angina pectoris, cardial asthma, uneven and irregular contractions of the heart with nonresonant heart sounds and indistinct pulse beat, and occasionally, when the orifice or valves of the aorta are involved, with accessory murmurs. In a few cases in addition to these symptoms there will also be progressive insufficiency of the heart, associated with hypertrophy and dilatation of the organ. When these symptoms develop in young or middle-aged subjects free from extensive sclerosis in the peripheral vessels, and no other cause can be assigned, there is considerable probability that syphilis may be incriminated, especially if there are suspicions of syphilitic infection even years before. Specific treatment may entail the reabsorption of recent gummatous neoformations in the vessels and heart and avert the secondary consequences and thus actually cure the patient. Even in the cases in which secondary alterations have developed, they can be improved and further progress arrested or at least postponed. Large aneurisms of the aorta and advanced gummatous or indurated myocarditis are also liable to be favorably influenced by specific treatment. In Runeborg's experience in a life insurance company, 84 out of 734 deaths were attributable to syphilis. This includes 43 deaths due to a syphilitic affection of the central nervous system, and 33 due to a syphilitic affection of the heart or aorta. In 24 of these 33 death occurred from sudden paralysis of the heart. The mortality from the central nervous system and from the heart in syphilis is, therefore, more closely parallel than is usually supposed. The parallelism becomes still more striking if we omit from the 43 "nervous" deaths the 22 due to progressive paralysis. The large proportion of deaths from heart affections is undoubtedly to be ascribed to the lack of correct diagnosis and consequently of specific treatment. Nervous affections are more likely to be differentiated and treatment instituted accordingly while there is yet time for their progress to be checked.

78. **Scleroderma in Children.**—Ebstein urges the necessity of applying the therapeutic lever in the very beginning of such affections. After the contractions and callosities are once established he knows of no means to induce their retrogression. In abortive treatment he places massage in the front rank. He describes the details of two cases. In one the affection developed suddenly in a healthy child after he had slept one hot afternoon in a damp meadow under a tree. He was hot and restless that night, but the next day seemed well, when isolated red spots appeared on one hand and arm, resembling flea bites. These spots remained unchanged for a year, when they gradually became bluish and hard and cracked. The physician who saw the red spots the day they appeared describes them as slightly raised, round spots like flat pimples, of different sizes, some almost as large as a quarter. They were redder and not so solid as the wheals of ordinary urticaria, but gradually became a paler red.

82. **Movable Heart.**—Rumpf describes a case of extreme mobility of the heart which he has had under observation for a number of years, and which has aroused much discussion. When the subject reclined on his back he experienced no discomfort, but when he lay on his side dyspnea and distress developed. Rumpf mentions parenthetically that the assumption that beer drinking necessarily entails hypertrophy of the heart, is not justified by the facts. He has examined employes of breweries who consumed ten quarts of beer a day, but performed constantly heavy manual work, and there was no hypertrophy of the heart. This was also the case with his patient, who had been in the habit of drinking large amounts of beer, but at the same time doing heavy work. He was robust and stout until he became emaciated from some cause, after which the symptoms of the abnormally movable heart developed. After he had been restored to his former weight the heart no longer slid around to such an extent, and he was completely relieved from his disturbances.

85. **Treatment of Following Head.**—Steffeck advises as a very effective and expeditious means of hastening the delivery of the head to place the woman in the Walcher pendant position and then, without regard to the position of the head or the possibility of the child's breathing, to press slowly and at brief intervals, with both hands downward and backward directly on the head of the child, as soon as the shoulders are spontaneously delivered. He describes 6 complicated cases, which he thinks establish the superiority of this method, and states that in 30 uncomplicated cases delivery was rapidly completed with all the children living.

Deutsche Zeitschrift f. Chirurgie, Berlin.

89 (LXV, No. 1.) *Ultimate Results of Operative Treatment of Tubercular Hip-Joint Disease. W. Manninger.—Ueber die Enderfolge der op. Behandlung bei Coxitis tub.
90 Beitrag zur den retroperitonealen Geschwülsten (tumors). O. Hartmann.
91 Kidney Injuries. Goldstein.—Ueber die in den letzten 20 Jahren auf die chir. Abtheilung des allg. Krankenhaus im Friedrichshain vorgekommenen Verletzungen der Niere.
92 Zur Casuistik seltener Hodenerkrankungen (rare affections of testicles). Derlin.
93 *Ueber Nach-Empfindungen (after-sensations) nach Amputationen. Hilger and van der Briele.
94 Fall von geheilter Peritonitis nach Durchbruch eines Duodenal-Geschwüres (perforation of ulcer). Blecher.
95 (Nos. 2-4.) *Ueber die Beziehungen zwischen Syphilis und Trauma. Stolper.
96 Betrachtungen über den Stand der Kriegs- (war) Chirurgie. Matthiolus.
97 Beiträge zur Circulation in der Schädelhohle (cranial cavity). Ziegler.
98 Zur Indicationen der Trepanation bei Gehirnblutung (cerebral hemorrhage) im Verlauf des Pertussis. Loevy.
99 Ueber die Reparations-Prozessen der Schädelknochen (bones of skull) mit Bezug auf die gewöhnlich angewandten Methoden der Cranioresection. N. Blagi.
100 Ueber benigne Epitheliome wahrscheinlich congenitalen Ursprungs. G. Perthes.
101 Zur Kenntniss der Pancreas-Necrose. E. Peiser.
102 Beitrag zur Kenntniss der congen. Darm- (intestine) Cysten. L. Gfeller.
103 Ueber solitäre Darm- (intestine) Stenosen. Riegling.
104 Ein Sarcom der Esophagus. V. Eicken.
105 Ueber die Torsion eines Fettbruches (fat rupture) und ihre Folgen. M. Wendel.
106 *Ueber eine neue Methode zum plastischen Ersatz von Sehnen (substitute for tendon) Defecten. Hertle.
107 (Nos. 5-6.) Zur Anwendung des Ethers als allgemeines Betaubungsmittel; Ether Tropf-Narcose. C. Hofmann.
108 Das Eucain B. Eine Studie über das Eucain, seine Vorgeschichte und seine Anwendung in der Praxis, nebst eigenen Beobachtungen und Versuchen mit Eucain B. Marcinowski.
109 *Ueber tabische Gelenkerkrankungen (arthropathies). K. Wolde.
110 Fall von musculöse Blasenhalsklappe (valve in cervix of bladder). W. Hirt.
111 Zur Casuistik der isolirten subcutanen Rupturen des Musc. biceps brachii und über einen Fall von Sartorius-Riss (laceration). A. Stieda.
112 Zur Dampf (steam) Sterilisation in der Chirurgie. E. Braatz.
113 Die Behandlung der Oberschenkel- (thigh) und Oberarm-Fracturen Neonatorum und kleiner Kinder (children). J. Dollinger.

89. **Ultimate Results of Operations for Tubercular Coxitis.**—This communication from Kocher's clinic at Berne is based on 44 cases and statistics collected from the literature, presented in tabulated form. In a previous series of 40 cases since 1893, Kocher cured 70 per cent.; in the present series of 44, 67.8 per cent. The general average is 27.1 per cent. cured in suppurating cases, the mortality 48.8 per cent. The mortality in the non-suppurating cases was 16.5 per cent., with 74.2 per cent. cured. Kocher teaches that a tubercular abscess should not be opened unless there is a prospect of removing the primary process in the bone or the causal tubercular process. The abscesses usually communicate with the joint and infection of one means infection of the other. Twenty-eight of his patients have been followed to date. The general health in all is good or very good. All limp more or less, with one exception. None use crutches, but half require a cane or high soles. Half have a good movable joint. All except 2 can walk for two to four hours without fatigue or pain. These 2 exceptions complain of fatigue after a half-hour walk. The working capacity is unimpaired in all, but 3 still have pain in the joint and a fistula persists in 2. The names of his private patients were not recorded and consequently they could not be traced, but the results presumably were superior to those of the above, as the after-care is more scrupulous in such cases.

93. **After-Sensations Following Amputations.**—One of Hilger's patients feels the missing foot like a normal foot, can move the toes and feel the contact between them. Another after amputation of a finger was still conscious of the presence of the finger, and could feel it. After removal of the dressings and visual evidence of the absence of the finger, these after-sensations vanished. From these experiences and those of others, Hilger is convinced that the after-sensations which follow amputation are the result of memory pictures of the missing organ. They have always been noticed in every case that has been under observation after the amputation, and are evidently a psychic phenomenon. In certain cases these memory pictures are prolonged by some irritation in the stump. Several cases are known in which the pain of a tuberculous knee or ingrowing nail was felt long after the limb had been amputated. He concludes that in case of failure to discover any source of irritation in the stump, psychotherapeutic measures might be successfully applied.

95. **Relations Between Syphilis and Trauma.**—Stolper emphasizes the fact that an insignificant wound may be the entering point for the syphilitic virus, and that trifling injuries may have serious results in syphilitics as the manifestations of the disease may develop at the site of a recent or long-healed traumatic lesion. Syphilitics are especially liable to spontaneous fractures and affections of the vessels of the joints. The psychic excitement of a brawl may kill a person with a syphilitic affection of the coronary arteries as surely as a blow on the chest. Stolper reviews the extensive literature on the subject, and his own experience with 20 cases. In 7 a syphilitic cutaneous muscular lesion developed at the point of the traumatism, and in 8 traumatically injured bones were the seat of the lesion.

106. **Plastic Operation for Tendon Defects.**—Hertle sutures the stumps of the tendon to a sound tendon near by, without traction. There is thus an interval between the implanted stumps in the sound tendon corresponding to the extent of the defect. After allowing three weeks for healing he slits the sound tendon to correspond to this space between and including the stumps. This leaves the sound tendon with only half its width at this point. The other half forms the connecting link between the stumps of the second tendon.

109. **Tabic Arthropathy.**—Wolde has had occasion to treat three cases and mentions that the knee was affected in more than half of the cases on record. Conservative treatment with orthopedic apparatus is superior to operation, as the joint rarely heals in a good position. A long stay in bed favors decubitus and other complications of tabes. Trauma is important, as tabetic subjects are frequently able to continue their occupation undisturbed, while an intercurrent traumatism will determine some joint affection which is liable to accelerate the course of the tabes and unfits the subject for earning a livelihood.

Muenchener Med. Wochenschrift, Munich.

114 (L. 2.) Von der Operation des Altersstars (senile cataract). Ein Rückblick. W. Manz.
115 *Pankreatitis mit Blutung (hemorrhage) und Nekrose. H. Hochhaus.
116 Ueber die Immunisierung des Typhus-Bacillus gegen specifische Agglutinine. P. T. Müller.
117 Ueber die Bindung hemolytischer Amboceptoren. J. Morgenroth.
118 *Ueber die Anwendung des Adrenalin als Hemostaticum in Fällen verzweifelter Blutung (desperate hemorrhage). O. Lange.
119 Ein neuer Griff mit Sperrvorrichtung (new handle with locking contrivance) für scheren- und zangenförmige chirurgische Instrumente (scissors and forceps). M. Liese.
120 Zur Vermeidung (avoidance) der Hematom-Bildung nach Kustners suprasymphysarem Kreuzschnitt (sacral incision). R. v. Fellenberg.
121 Ueber das Verhalten der Leucocyten bei Eiterungen (behavior in case of suppurations), besonders beim Leber- (liver) Abszess. F. Perutz.
122 Ophthalmia neonatorum und der Gonokokkus. T. Axenfeld.
123 Roentgen-Instrumentarium "System Dessauer." F. Dessauer.
124 (No. 3.) Bemerkungen zur Trachom-Frage (the trachoma question). A. Peters.
125 *Die Verwendung der Borsäure (boric acid) in der inneren Medicin. G. Merkel.
126 *Fall von ausgedehnter Resektion des Ductus choledochus und hepaticus wegen Carcinoma choledochi, mit nachfolgender Ektomie der Gallenblase (gall-bladder) und Hepatiko-Duodenostomie. H. Kehr.
127 Ueber Myogen, ein neues Eiweiss- (albumin) Präparat. R. O. Neumann.
128 Beiträge zur Kenntniss der Nebenpocken (vaccinolæ) im Verlauf der Vaccination, sowie der postvaccinalen Exantheme. A. Groth.
129 Von der Operation des Altersstars (senile cataract). W. Manz. A Retrospect. (Commenced in No. 2.)
130 Practical Application of Determination of Freezing-Point of Blood and Urine in Renal Affections. O. Rumpel.—Erfahrungen über die prakt. Anwendung der Gefrierpunktsbestimmung, etc. (Commenced in No. 1.)
131 Zur Geschichte der Verdauungs- (history of digestion) Physiologie. Spaet.

115. **Pancreatitis with Hemorrhage and Necrosis.**—The autopsy of the first of the three cases described showed that the inflammation in the pancreas could not have been responsible for the hemorrhage and necrosis, as the latter did not occur at the most inflamed points and sometimes was quite remote from any signs of inflammation. Neither could they be ascribed to the action of trypsin, as they occurred mostly outside of the gland. There was nothing to indicate a direct causal relation between these three processes. All three seemed to be the co-ordinated effect of some still unknown infectious agent. The acute affection proved fatal in twelve days. There was no trace of sugar in the urine at any time. The only sign to locate the disease in the pancreas was the localization of the pain at this region and its persistence. The leucocytes were always normal. The pain is important in differentiating, not only on account of its extreme intensity but for its persistence. The violent attacks of pain may also occur at a time when all the other symptoms and the general condition indicate improvement. This does not happen in ileus or peritonitis. The pain is probably due to the compression of the plexus behind the pancreas by the hemorrhage and inflammation.

118. **Adrenalin in Threatening Hemorrhages.**—With 25 c.c. of adrenalin Lange was able to save the lives of 6 patients who were threatened with death from hemorrhage. The first patient was a hemophilic young man, constantly bleeding from a cut in the thumb. The hemorrhage was checked for twenty-four hours by gelatin internally and by the rectum, but then recurred. The wound was then dressed with gauze impregnated with 50 per cent. adrenalin and the hemorrhage stopped at once. The same result followed the application of the gauze in 2 cases of hemorrhage during the changing of the dressings of an appendicitis incision. The secretion from the wound much decreased after the application of the adrenalin. Two other patients received the adrenalin internally in treatment of recurring hemoptysis or hematemesis. After taking 30 drops of adrenalin twice in two hours, the hemoptysis ceased permanently. The same effect followed in a case of morning hematemesis from a gastric cancer.

125. **Boric Acid in Internal Medicine.**—Merkel recalls that several years ago he administered boric acid internally on account of its assumed diuretic action. One to 2 gm. a day were taken in an aqueous solution by 11 patients, but never longer than for eight days. The polyuria that followed even small doses surpassed twice and three times the normal amount, and the boric acid could be detected in the urine for seventeen days after suspension. Seven of the patients complained of various gastric disturbances while they were taking it, besides colics and diarrhea. Another patient who experienced relief from local insufflation of boric acid in catarrhal affections found that an erythem always developed afterward which persisted for several days.

126. **Hepatico-Duodenostomy.**—Kehr found it necessary to resect nearly the entire length of the common bile duct on account of an annular carcinoma. The gall bladder was removed with it, and the hepatic duct just below the fork was sutured to the duodenum a short distance from the tied-off stump of the common bile duct. The patient was a man of 53 and was dismissed immeasurably improved. He tabulates the differences between carcinoma and stone of the bile duct from a clinical standpoint. Carcinoma is more frequent in men than in women; there is seldom colic, and usually icterus begins very gradually, but becomes intense and regular. The stools are constantly clay colored, although they may vary in case of a polypoid tumor. The duration of the affection does not

exceed six months. Chills and fever are rare; the cachexia is very pronounced toward the last, and the gall bladder is large and palpable in 80 per cent. There is usually ascites. His success in the case reported compels him to extend the scope of surgical intervention to cancers of the bile duct, which he has hitherto considered beyond the reach of surgery. He always recommends an operation in case of chronic icterus, which suggests an obstacle in the bile duct or pancreas, in the hope that the trouble may be merely a chronic pancreatitis. He describes his technic in the case reported, which is the first case of carcinoma of the bile duct operated on to his knowledge, and the first hepatico-duodenostomy. The dressings were soaked with bile during the first few days, but it did not proceed from the hepaticus but from the minute severed biliary passages in the liver where the gall bladder had formerly rested. He did not use a button, and left the tampon in place for two weeks. He did not tampon the anastomosis, but interposed a layer of omentum. Before performing a laparotomy on account of gallstones, he has lately adopted the practice of accustoming his patients to the use of the stomach sound, and in 50 such cases found this measure of marked benefit.

Giornale d. R. Accad. di Medicina, Turin.

132 (LXV, 10-11.) Sul diabete sperimentale e la secrezione pancreatica esterna. U. Lombroso.
133 La resistenza dei globuli rossi (red corpuscles) del sangue negli individui affetti da tumori maligni. M. Donati.
134 Sulla Presenza di calici gustativi (taste buds) nella superficie linguale dell' epigiottide umana con alcune riflessioni sugli stessi organi che si trovano (same organs in) nella mucosa della laringe. F. Kiesow.
135 Il metodo biologico e le sue applicazioni alla diagnosi differenziale delle farine (flours) delle leguminose. E. Bertarelli.
136 L'irritabilità del muscolo cardiaco nell' avvelenamento (intoxication) eso-ed endocardiale. A. Benedicenti.
137 Cancro primitivo del fegato (liver) e cirrosi adenomatosa. G. Sotti.
138 La percezione binoculare nei difetti (defects) congeniti di motilità degli occhi (of the eyes). C. Gaudenzi.
139 *Concretions Found in Renal Cortex. G. Marchetti.—Sopra alcune concrezioni rinvenute nella corteccia del rene.
140 (No. 12.) *Eziologia e patogenesi della rabbia (rabies). F. Levy.
141 Contributo alla cura delle fratture del collo del femore (fractures of neck of femur), della rotula e delle fratture mal consolidate. I. Isnardi.
142 La eliminazione intermittente del bleu di metilene negli epatici (in liver patients). G. Mattirolo.
143 Sulla frequenza ed assenza delle cosidette (frequency and absence of the so-called) intime sarcomatose. A. Marro.
144 Una nuova alterazione dei gangli linfatici. A. Marro.
145 Alterazioni del polso (pulse) nell' ileo-tifo (typhoid fever). G. Marro.

139. **Concretions Found in Cortex of Kidneys.**—Marchetti states that he found a number of concretions in the cortex of the kidneys of a person who had succumbed to pneumonia, with no signs of tuberculosis. The concretions resembled in every respect—even to the positive response of the nucleus to the tests for elastin—the descriptions of the bodies found enclosed in the giant cells of tubercular lesions.

140. **Alleged Discovery of Germ of Rabies.**—This communication proceeds from the Institute of Hygiene of the University of Pavia, of which Prof. G. Sormani is director. It announces the discovery in the salivary glands, pancreas and nervous system of animals known to be rabid or artificially infected with rabies, of a specific germ, which could be isolated and cultivated, and reproduced rabies when injected into other animals (guinea-pigs and rabbits). It stains the culture media in its growth by the elaboration of a yellow pigment, most marked on potato. It liquefies gelatin, although sometimes not until after the culture is a month old; coagulates milk and induces acidity in wine, while in broth it may enhance the original alkalinity, developing a characteristic odor. In anaërobic media it generates gas. The most characteristic cultures were obtained on a sterilized red beet, which Levy has found the best culture medium for various germs, including the lepra bacillus. The beet was inoculated with scraps of choroid tissue from the fourth ventricle of a rabbit's brain. It is usually a small sphere, .6 to 1 micron in size, and the name proposed for it is the *Blastomyces* or *Saccharomyces aureus lyssæ*. The parasite locates by preference in the pia mater, and in this anaërobic medium generates carbon oxid. It is evidently to the noxious influence of this gas on the nerve centers that a large proportion of its pathologic effect is due, as the spectrum and chemical tests revealed marked carbon oxid hemoglobinemia in the inoculated animals. This fact suggests that benefit might be derived from inhalation of oxygen in cases of hydrophobia. The photographs accompanying the communication will appear in the next issue of the *Giornale*.

British Medical Journal, London.

January 24.

146 *Modifications and Improvements in Operations on the Biliary Passages. A. W. Mayo Robson.
147 *The Operation of Cholecystectomy with a Record of Cases. B. G. A. Moynihan.
148 Gallstone in the Common Bile Duct: Cholecystotomy: Recovery. S. J. Ross.
149 Two Operations Performed upon the Liver Through the Chest Wall. G. P. Newbolt.
150 Case of Liver Abscess in a Child Aged Two and a Half Years. W. J. J. Arnott.
151 *Note on a New Method of Producing Hemolysins. M. Armand Ruffer and Milton Crendiropoulo.
152 *Bottle-Finisher's Cataract. William Robinson.
153 *Perforation of the Esophagus by Tuberculous Glands. Clive Riviere.
154 *An Improved Hyprobromite Process for the Estimation of Urea. H. J. Pechell.

146. **Operations on the Biliary Passages.**—Robson's paper is a general review of the treatment of morbid conditions of the gall ducts and bladder. He holds that as soon as gallstones give serious trouble their removal by operation is the most rational method of treatment, but his methods and views to some extent have been changed since his earlier work. When gallstones are once formed no medicine can relieve them, though much can be done for the accompanying catarrh; medical treatment should be thoroughly tried before surgical treatment is resorted to. It is often impossible to say what operation will have to be done and the surgeon who attempts to relieve these conditions must be prepared for whatever he may find. Robson goes into detail as to the preparation of the patient, including saline infusions in asthenia and the treatment of the tendency to hemorrhage in cholemic patients. The only special instrument he uses is the gallstone scoop. His ligatures and sutures are formalin catgut prepared by the xylol process and he uses celluloid thread for the outer and serous sutures in stitching the incision in the duct in choledochotomy. His assistants all wear rubber gloves, though he himself does not, as they interfere with his sense of touch. A firm sandbag under the patient at the level of the liver is essential. Formerly he used to make a vertical incision through the linea semilunaris, but he now always makes his incision over the middle of the right rectus in a line parallel with its fibers, which are then separated by the finger, the posterior sheath of the rectus and peritoneum being divided together. Where the gall bladder is distended and there is no jaundice, a small incision of two or three inches only may be required, but often it is necessary to explore the ducts and instead of prolonging the incision downward as formerly, he carries it upward in the interval between the ensiform cartilage and the right costal margin as high as possible, thus exposing the upper surface of the liver very thoroughly. He finds by lifting the lower border of the liver in bulk it is necessary to first draw the organ down from under cover of the ribs, the whole of the gall bladder, cystic and common ducts are brought quite close to the surface and the gall bladder is usually strong enough to endure gentle traction, which holds the parts well exposed. The surgeon then has under his eye the whole length of the ducts with the head of the pancreas and duodenum and can deal with the gall bladder, cystic and hepatic quite easily. When the duct is incised, there is generally a free flow of bile, which is almost always infected, but by rapidly emptying it out and using sterile gauze pads, the flow can be drained off without infecting the parts. After removal of the obvious concretion, he passes the finger behind the duodenum, along the course of the hepatic ducts, to feel if gallstones are there and then the common duct is incised, his gallstone scoop is passed into the primary division of the hepatic duct in the liver and down to the duodenal orifice of the common bile duct, and if thought necessary to ensure the patency of the opening into the duodenum, a long probe is passed into the bowel. Incision into the bile duct being made, it is closed by the ordinary

curved round needle and continuous catgut sutures. A continuous fine green catgut and a spun celluloid thread are employed to close the peritoneal edges of the duct. Where the gall bladder is contracted and the pancreas indurated and swelling from chronic pancreatitis is likely to press on the common duct, he inserts a drainage tube directly into the duct, passing it upward into the hepatic duct and closing the opening around it with purse-string sutures, but where this is not done and the size of the gall bladder permits, he usually fixes a rubber tube into the fundus of the gall bladder in the same way, thus shortening the area of infected bowel and avoiding pressure along the newly-sutured opening of the duct. He now never spends a long time in manipulating the impacted stone, but at once incises the duct, removes the concretion and closes the opening. Although there is seldom any fear of leakage or infection there is usually some tendency to pouring out of fluid in the first few hours. He therefore generally inserts a gauze drain through a split drainage tube, bringing it out by the side of the gall-bladder drain and usually removes it within twenty-four hours. The wound is then closed by a continuous catgut suture, first, peritoneum and deep rectus sheath, then the anterior rectus sheath, and lastly the skin margins are sewed with silkworm gut. He employs forcipressure for the immediate arrest of hemorrhage, but finds it more satisfactory to ligature the bleeding points, as in jaundiced cases the vessels are apt to bleed subsequently. If the liver is torn the bleeding must be carefully arrested before the abdomen is closed. Ordinary cholecystotomy with a distended gall bladder is a very simple operation. He condemns the so-called ideal operation of Langenbuch and the two-stage operation of Bloch. In contracted gall bladder, cholecystectomy may be necessary or advisable. The operation is described. It is easy to remove very contracted organs and use the cystic duct as a pedicle and ligature it. A method of treating the pedicle which he finds useful is to seize it with strong pressure forceps and crush it, thus making a groove in which the ligature lies very snugly. Bleeding vessels are ligated, and as a precaution a strip of iodoform is left in contact with the end of the ligated duct and brought to the surface through a split drainage tube. He has not found Dr. Mayo's operation of shelling out the mucosa of the gall bladder always practicable where there has been much inflammatory disturbance. The operations of duodenocholedochotomy and cholecystenterostomy are described. In case of malignant disease much more extensive operations may have to be done and a careful search should always be made for intravisceral fistulæ, of which he gives examples. If neglected they probably mean extravasation and death. If pyloric stenosis exists, pyloroplasty or gastroenterostomy will have to be performed. If the head of the pancreas is enlarged as a whole, causing a suspicion of malignancy, it is advisable to reserve one's opinion as there is a possibility that cure may occur as in the instance he reports. The after-treatment is a pint of saline fluid with an ounce of brandy given by enemata and 5 minims of liquor strychnia (B. P.) given subcutaneously, repeated if necessary. Beside a teaspoonful of hot water or hot tea from time to time all feeding is by the rectum for the first twenty-four hours, though more water may be given if there is no vomiting. After forty-eight hours, if vomiting does not appear, milk and soda and barley water can be freely given. After the fourth day light custards, puddings and fish and chicken on the fifth and sixth day, after which the diet becomes almost normal. The bowels are not disturbed before the fifth or sixth day, and then only by enemata, unless there is vomiting and distension. In this case a grain of calomel is administered, followed by two ounces of aperient water. He does not believe in the use of morphin under any circumstances. If a sedative is needed 10 grains of aspirin will be found useful. It should be repeated in two hours, if required. If vomiting is troublesome or epigastric distension persists, gastric lavage will be found useful. As a rule recovery is uneventful and the after-treatment for the most part negative. Stitches are removed on the eighth day, the tube coming away at the same time. The wound left, he says, heals by granulation. Only simple dressings are used. The chief point he wishes to make is that we should operate early before serious complications have ensued and that the operation should be thorough, expeditious and careful.

147. **Cholecystectomy.**—The operation of cholecystectomy is described by Moynihan as follows:

A vertical incision near the outer margin of the right rectus muscle is made and the muscle fibers split. The usual length of this incision is 5 in. If additional room is required it is best obtained by continuing the upper end of the incision along the costal margin upwards and inwards. All adhesions of the gall bladder, ducts and liver having been cleared, the liver is rotated by gentle traction upon the gall bladder until the cystic and common ducts are straightened and brought on a level with the wound. By this maneuver the operation is rendered simpler and quicker. The peritoneal investment of the gall bladder is then cut through along the line of its reflexion on to the liver, and the gall bladder is quickly stripped from the liver and grasped in the hand, so as to exert a gentle traction on the cystic duct. A few bleeding points are occasionally seen on the denuded liver surface, and a ligature or a suture transfixing the bleeding point may be needed. A circular incision is now made through the peritoneum, at the neck of the gall bladder, and a cuff of peritoneum reflected from the neck and from the commencement of the cystic duct. A catgut ligature is tied round the duct, and the gall bladder is cut away. The mucous membrane of the severed end of the cystic duct is gently cleansed and wiped with a 1 in 500 biniodid lotion, and the peritoneal cuff is replaced and sutured. A purse-string suture may be applied over this, the first line of suture being buried when the purse-string suture is tied. No drainage tube is needed as a rule. If, however, owing to great thickening and adhesion at and around the cystic duct there is difficulty in performing all the steps indicated, and if the closure of the cystic duct is imperfect or its peritoneal hood not completely satisfactory, drainage may be provided by a split rubber tube or by a petticoat of rubber tissue packed with sterile gauze. If in any case the precise closure of the duct were impossible, I should leave a long clip on the end of the duct and drain by the side of the clip with a large split rubber tube having a gauze wick. Throughout the operation the most scrupulous attention is paid to the details of cleanliness. The viscera are carefully protected by gauze or sponge packing, and all swabs which are soiled with bile or inflammatory effusions are at once discarded. If the peritoneum be unavoidably soiled it may be wiped over with a swab wet with sterile salt solution. The hands are rinsed always in salt solution. No antiseptic is at any time allowed to touch the peritoneum.

A number of cases are reported. He mentions Mayo's operation, but does not express an opinion on it.

151. **Hemolysins.**—Ruffer and Crendiropoulo found by experiments that if the urine of a healthy man was injected two or three times subcutaneously into a rabbit the serum of this rabbit acquired a marked hemolytic action on human red corpuscles. They detail their experiments and the results. They remark that the specificity of these serums are not absolute, but this is not astonishing when one reflects that one is dealing with a liquid as complex as urine, for among the hemolysogenous substances contained in the urine there must be several common to many kinds of animals.

152. **Bottle-Finisher's Cataract.**—Robinson describes cataract as he finds it among bottle finishers, who, as a rule, have their eyes most exposed to the intense glare of the glass furnace. Only exceptionally do other workmen in the works suffer in this way. The bottle finisher has to pick out just so much melted glass as will be required to make the rim of the bottle. This takes some time, and, of course, exposure. He explains the mechanism of cataract growth being due to the special focusing on the lens of heat rays. The contraction of the pupil by the light protects the periphery of the lens at first from damage.

153. **Tuberculosis.**—Riviere reports three cases of perforation of the esophagus by tuberculous glands and remarks on its comparative rarity. He finds few instances recorded in the literature.

154. **Urea Estimates.**—Following a suggestion derived from Halliburton's Text-book of Physiological Chemistry, Pechell thought the ordinary method of estimate for clinical purposes might be improved by converting the urine to be examined into artificial "diabetic" urine. This was done by the addition of 2 c.c. of 25 per cent. glucose solution, to 5 c.c. of urine, used in Dupre's method, which gives a urine containing about 7 per cent. of sugar. Details of a few observations are given by comparing the readings thus obtained by those recorded by the same urine without the addition of sugar, a practically constant excess of one-eleventh (9 per cent.) was noticed. He can not explain the difference in the evolution of nitrogen of urea in watery solution and in urine, nor the reason why glucose increases the nitrogen output.

New Patents.

Patents of interest to physicians, etc., January 20 and 27:

718896. Electrotherapeutic apparatus. Wm. H. Ames, St. Louis, and E. E. Clement, Washington, D. C.
718594. Massage apparatus. Charles J. Bailey, Newton, Mass.
718746. Invalid bedstead. Silas W. Bennett, McDonald, Pa.
718764. Dropper for medicines. George B. Hutchings, Galveston, Texas.
718766. Massage machine. Thomas D. Ingram, Washington, D. C.
718785. Respirator. James W. McNary, Dayton, Ohio.
718801. Dropping mouthpiece for bottles. Wm. L. Straus, New York.
718958. Massaging apparatus. Fenton B. Turck, Chicago.
719175. Applicator. Henry A. Bierley and J. G. Nehrbas, Indianapolis.
719078. Supporting rest for invalids. Joseph A. Blanchard, Waterbury, Conn.
718979. Hypodermic syringe. Milton Campbell, Philadelphia.
719311. Body brace. Wm. B. Dewees, Salina, Kan.
719206. Obstetric sheet. Sarah Faulkner, New York.
719228. Disinfecting device. Louis E. Jones, Conshohocken, Pa.
719059. Litter. Joseph A. Tabor, Scranton, Miss.

The Public Service.

Army Changes.

Movements of Officers of the Medical Department, U. S. A., under orders from the Adjutant-General's Office, Washington, D. C., from Jan. 26 to Feb. 7, 1903:

Fletcher, Jr., Richard M., contract surgeon, U. S. A., is relieved from duty at Fort Niobrara, Neb., and will proceed to his home, Huntsville, Ala., and on arrival report by letter to the Surgeon-General of the Army for annulment of contract.

Gilchrist, Harry L., first lieut. and asst.-surgeon, U. S. A., will proceed to Fort Screven, Ga., on official business pertaining to the Medical Department of the Army, and on completion of this duty will return to his proper station in this city.

Straub, Paul F., captain and asst.-surgeon, U. S. A., is granted leave of absence for four months, with permission to go beyond sea.

Tweedie, Hedley V., contract surgeon, U. S. A., is relieved from duty in the Department of California, and will proceed to his home, Jackman, Me., and on arrival report by letter to the Surgeon-General of the Army for annulment of contract.

Arthur, William H., major and surgeon, U. S. A., is detailed as a member of the examining board convened for the examination of officers of the Corps of Engineers at the Army Building, New York City, vice Captain James Wilson, asst.-surgeon, hereby relieved.

Brown, Ira C., contract surgeon, U. S. A., now at Buffalo, N. Y., will proceed to Fort Niobrara, Neb., and report in person to the commanding officer of that post for duty and by letter to the commanding general, Department of the Missouri.

Kennedy, James S., contract surgeon, U. S. A., now at Chambersburg, Pa., will proceed to San Francisco, and report in person to the commanding general, Department of California, for assignment to duty.

O'Neill, Joseph A., contract surgeon, U. S. A., is directed to report in person to the commanding general, Department of the Lakes, at Chicago, not later than Feb. 18, 1903, for assignment to duty with the Fourteenth Infantry, and to accompany that regiment to the Philippines, and on arrival at Manila to report in person to the commanding general, Division of the Philippines, for assignment to duty.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending Feb. 7, 1903:

P. A. Surgeon H. C. Curl, discharged from treatment and ordered to duty at the Naval Hospital, Mare Island, Cal.

P. A. Surgeon R. W. Plummer, detached from the U. S. S. *Prairie* and ordered to the Navy Yard, New York.

P. A. Surgeon F. M. Furlong, detached from the Navy Yard, New York, and ordered to the U. S. S. *Prairie*.

P. A. Surgeon L. W. Curtis and P. A. Surgeon M. B. Pitts commissioned surgeons from Dec. 2, 1902.

P. A. Surgeon M. R. Spear and P. A. Surgeon W. B. Grove, commissioned passed assistant-surgeons from Nov. 7, 1902.

Drs. L. H. Schwerin, H. T. Nelson, Jr., and C. C. Grieve, appointed acting assistant-surgeons from Jan. 29, 1903.

Medical Director W. G. Farwell, retired, detached from the Marine Recruiting Station, Philadelphia, and ordered to the Navy Yard and Hospital, Portsmouth, N. H.

Medical Director C. H. Cooke, retired, ordered to the Naval Recruiting Station, Philadelphia.

Medical Inspector J. C. Spear, retired, ordered to the Marine Recruiting Station, Philadelphia.

Surgeon Clement Biddle, detached from the Naval Recruiting Station, Philadelphia, and to continue duty at Naval Hospital, Philadelphia.

P. A. Surgeon L. Morris, detached from duty at the Naval Hospital, Philadelphia, and granted sick leave for three months.

Asst.-Surgeon J. C. Thompson, detached from duty with the Marine Detachment, Dry Tortugas, Fla., and to duty on the U. S. R. S. *Columbia*.

Asst.-Surgeon J. P. DeBruler, ordered to the Naval Hospital, Norfolk, Va.

A. A. Surgeon H. L. Brown, to duty at the Naval Proving Grounds, Indian Head, Md.

A. A. Surgeon H. W. Judd, to the Naval Station, Key West, Fla., for duty at Dry Tortugas, Fla.

A. A. Surgeon P. S. Rossiter, to the Naval Recruiting Station, Baltimore.

Asst.-Surgeon J. A. Murphy, detached from the U. S. S. *Don Juan de Austria*, and to duty on the U. S. S. *Monadnock*.

Asst.-Surgeon W. Seaman, detached from the U. S. S. *Monadnock* and to duty on the U. S. S. *Don Juan de Austria*.

Medical Inspector G. E. H. Harmon, to duty at the Naval Station, Port Royal, S. C.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Feb. 5, 1903:

Geddings, H. D., assistant surgeon-general, detailed as recorder of board to meet at Washington, D. C., for the physical examination of an applicant for the position of second assistant engineer, R. C. S.

Surgeon H. R. Carter, to report at Washington, D. C., Feb. 6, 1903, for duty as temporary member of Sanitary Board.

P. A. Surgeon Rupert Blue, relieved from duty at Milwaukee, Wis., and directed to proceed to San Francisco, and report to Surgeon A. H. Glennan for duty.

Asst.-Surgeon R. H. von Ezdorf, granted eight days' extension of leave of absence.

Asst.-Surgeon J. W. Kerr, to report at Bureau for instructions.

Asst.-Surgeon B. S. Warren, relieved from duty as recorder of board to meet at Washington, D. C., for the physical examination of an applicant for the position of second assistant engineer, R. C. S.

A. A. Surgeon E. Alexander, granted leave of absence for twenty-seven days from February 1.

A. A. Surgeon H. J. Hamilton, granted leave of absence, on account of sickness, for thirty days from December 27.

A. A. Surgeon B. Y. Harris, granted leave of absence for ten days from February 21.

A. A. Surgeon F. F. Sams, granted leave of absence for fourteen days from February 4.

Pharmacist W. W. Kolb, granted leave of absence for twenty-eight days from February 12.

APPOINTMENTS.

Henry R. Carter, appointed acting assistant-surgeon for duty at Newport News, Va.

Robert H. Gray, appointed acting assistant-surgeon for duty at Shreveport, La.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Feb. 7, 1903:

SMALLPOX—UNITED STATES.

California: San Francisco, Jan. 18-25, 8 cases, 1 death.
Illinois: Chicago, Jan. 24-31, 14 cases, 3 deaths.
Indiana: Jan. 24-31, Elwood, 2 cases; Evansville, 4 cases; South Bend, 1 case.
Kentucky: Jan. 24-31, Lexington, 12 cases; Newport, 1 case.
Maine: Biddeford, Jan. 24-31, 26 cases.
Maryland: Baltimore, Jan. 24-31, 2 cases.
Massachusetts: Jan. 24-31, Boston, 7 cases, 1 death; Haverhill, 3 cases, 1 death.
Michigan: Grand Rapids, Jan. 24-31, 9 cases.
Nebraska: Omaha, Jan. 24-31, 1 case.
New Hampshire: Manchester, Jan. 24-31, 3 cases.
New Jersey: Camden, Jan. 24-31, 4 cases; Hudson County, including Jersey City, Jan. 25-Feb. 1, 5 cases; Newark, Jan. 24-31, 2 cases, 1 death.
New York: New York, Jan. 24-31, 3 cases, 1 death.
Ohio: Cincinnati, Jan. 23-30, 12 cases; Cleveland, Jan. 24-31, 10 cases, 3 deaths; Dayton, Jan. 24-31, 1 case.
Pennsylvania: Altoona, Jan. 20-31, 6 cases, 5 deaths, imported from Pittsburg; Erie, Jan. 24-31, 9 cases; Johnstown, Jan. 24-31, 10 cases, 1 death; McKeesport, Jan. 24-31, 3 cases; Philadelphia, Jan. 24-31, 29 cases, 4 deaths; Pittsburg, Jan. 24-31, 16 cases, 6 deaths; Pottsville, Jan. 24-31, 11 cases.
South Carolina: Charleston, Jan. 24-31, 3 cases; Greenville, Jan. 17-24, 1 case.
Tennessee: Memphis, Jan. 24-31, 2 cases.
Utah: Salt Lake City, Jan. 17-24, 16 cases.
Washington: Tacoma, Jan. 18-25, 1 case.
Wisconsin: Milwaukee, Jan. 24-31, 8 cases, 1 death.

SMALLPOX—FOREIGN.

Canada: Hamilton, Jan. 1-31, 1 case; Winnipeg, Jan. 17-24, 1 case.
France: Marseilles, Dec. 1-31, 37 deaths.
Great Britain: Jan. 10-17, Birmingham, 1 case; Bradford, 35 cases; Dublin, 2 cases; Liverpool, 42 cases, 2 deaths; London, 2 cases; Manchester, 16 cases, 1 death; Nottingham, 13 cases.
India: Bombay, Dec. 23-Jan. 6, 18 deaths.
Italy: Palermo, Dec. 27-Jan. 30, 24 cases, 1 death.
Mexico: City of Mexico, Jan. 11-18, 3 cases.
Russia: Moscow, Jan. 3-10, 3 cases, 1 death.
Spain: Malaga, Dec. 1-31, 10 deaths.
Straits Settlements: Singapore, Dec. 13-20, 1 death.

YELLOW FEVER.

Colombia: Panama, Jan. 19-26, 4 cases, 2 deaths.
Ecuador: Guayaquil, Jan. 3-17, 35 deaths.
Mexico: Vera Cruz, Jan. 19-26, 4 cases.

CHOLERA—INSULAR.

Philippines: Dec. 7-13, Manila, 7 cases, 5 deaths; Provinces, 318 cases, 207 deaths.

CHOLERA—FOREIGN.

Malta: Quarantine Island, Jan. 17, 7 cases, from Alexandria.
Egypt: Alexandria, Jan. 5-12, 1 case.
Straits Settlements: Singapore, Dec. 13-20, 5 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, Jan. 18, 1 death.

PLAGUE—FOREIGN.

India: Bombay, Dec. 23-Jan. 6, 341 deaths; Karachi, Dec. 21-28, 39 cases, 20 deaths.
Mexico: Mazatlan, to January 5, 60 deaths.

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A CORKER

BUT NOT MUCH OF A PASTOR.

There was an old clergyman in central New York state some years ago who was a very powerful speaker, but whose private life was by no means exemplary. Some of the more out-spoken of his parishioners were in the habit of remonstrating with him regularly about this, and his reply invariably was, "Don't do as I do, do as I tell you to do."

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